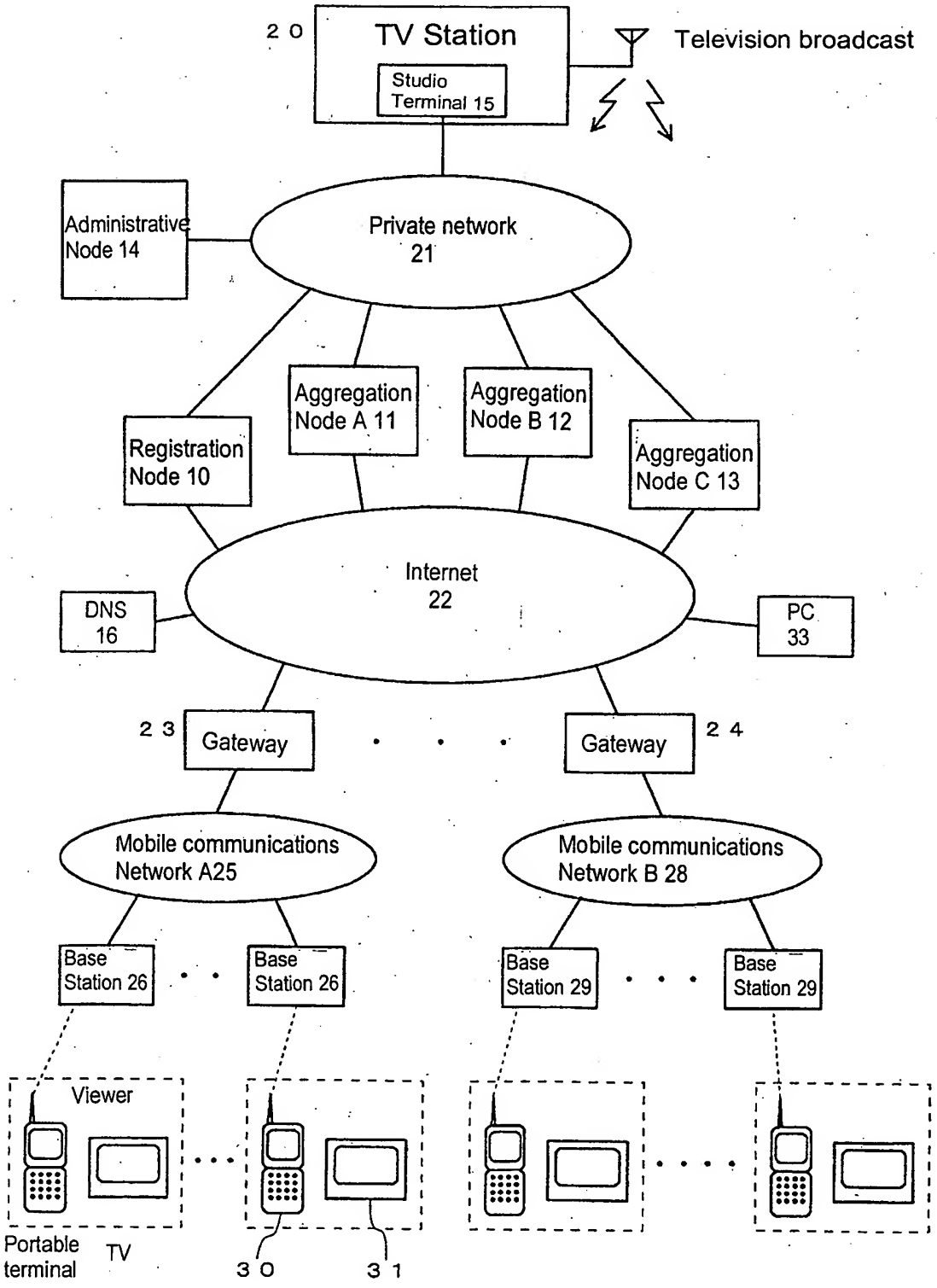
FIG. 1


20
TV Station
Studio Terminal 15
Television broadcast
Administrative Node 14
Private network 21
Aggregation Node A 11
Aggregation Node B 12
Registration Node 10
Aggregation Node C 13
Internet 22
DNS 16
PC 33
23
Gateway
Gateway
24
Mobile communications Network A25
Mobile communications Network B 28
Base Station 26
Base Station 26
Base Station 29
Base Station 29
Viewer
Portable terminal
TV
30
31

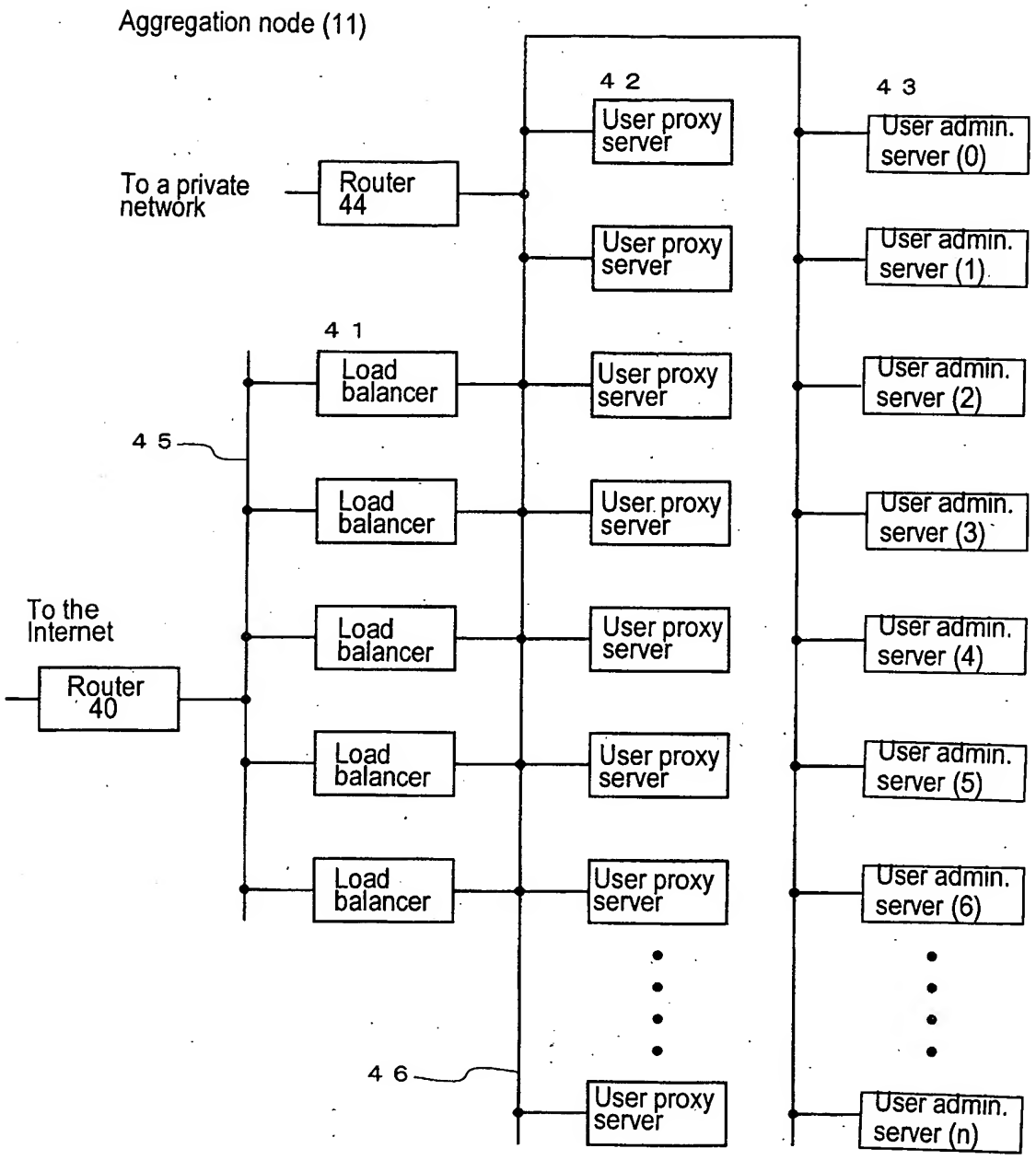

Aggregation node (11)
To a private network
Router 44
To the Internet
Router 40
41
Load balancer
Load balancer
Load balancer
Load balancer
Load balancer
45
42
User proxy server
User proxy server
User proxy server
User proxy server
User proxy server
User proxy server
User proxy server
46
43
User admin. server (0)
User admin. server (1)
User admin. server (2)
User admin. server (3)
User admin. server (4)
User admin. server (5)
User admin. server (6)
User admin. server (n)

FIG. 2

FIG. 3 (a)

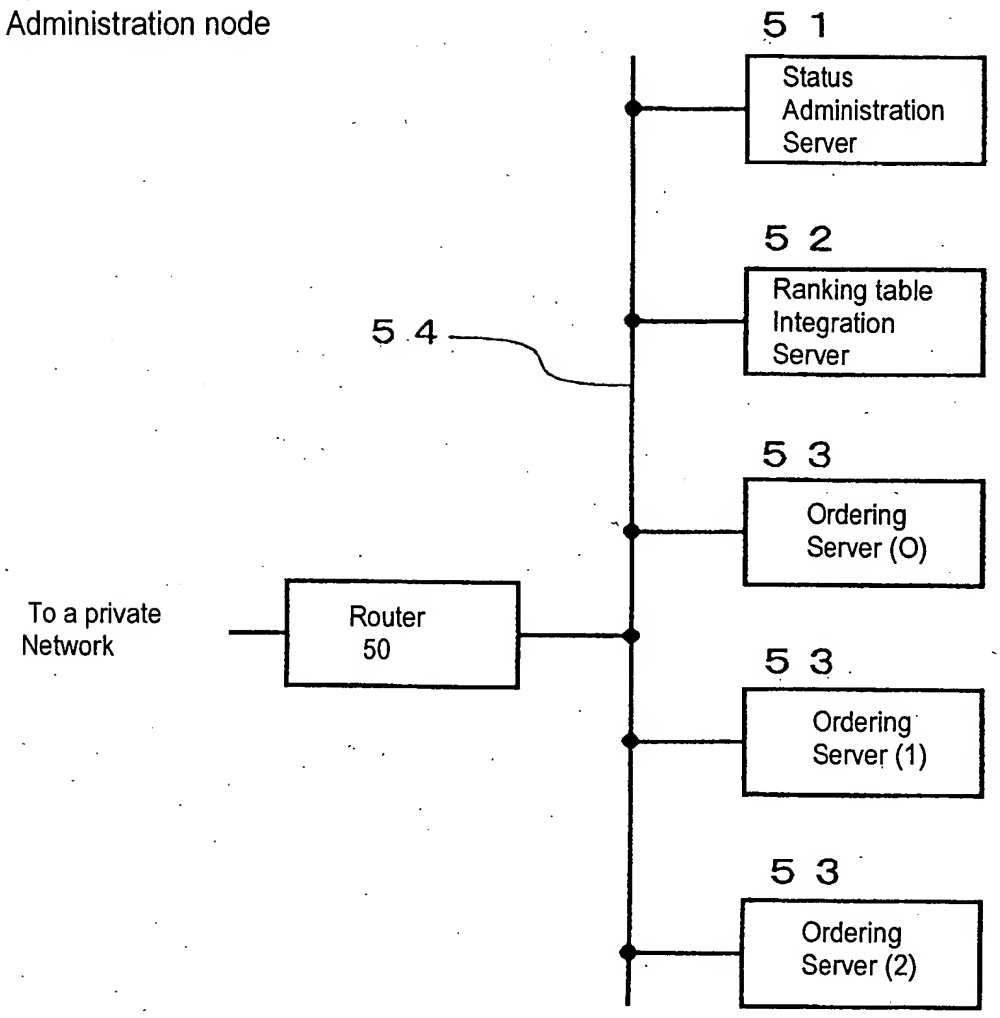

Administration node
5 1
Status Administration Server
5 2
Ranking table Integration Server
5 4
5 3
Ordering Server (O)
To a private Network
Router 50
5 3
Ordering Server (1)
5 3
Ordering Server (2)

FIG. 3 (b)

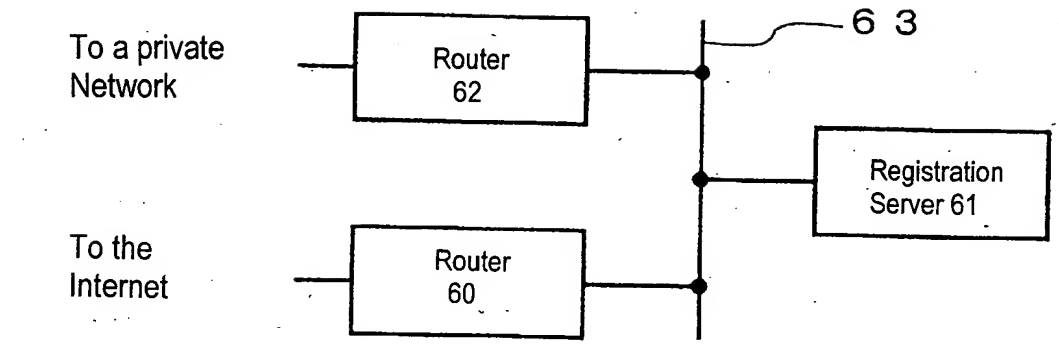
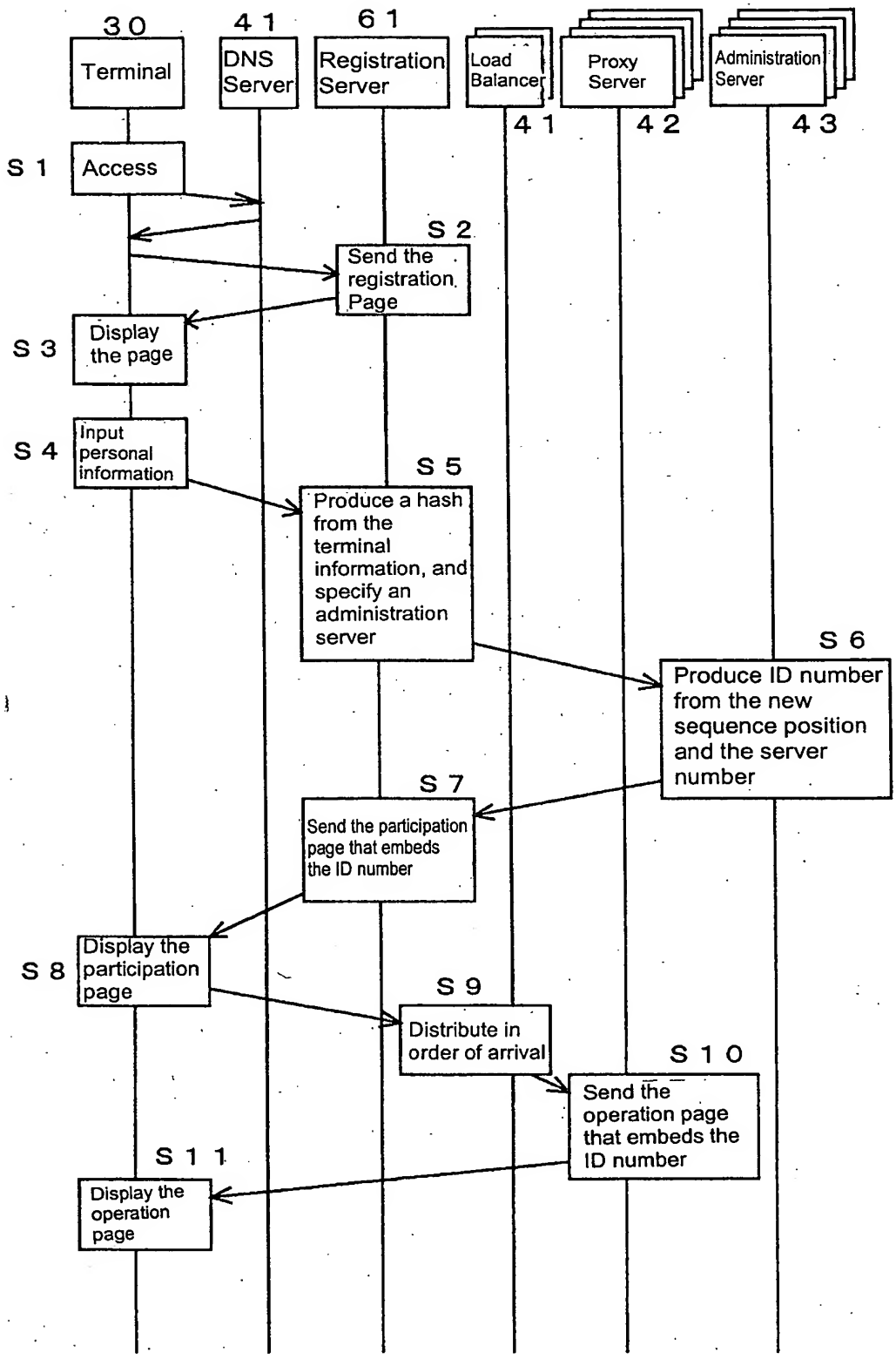

Registration node
To a private Network
Router 62
6 3
Registration Server 61
To the Internet
Router 60

FIG. 4



(Below, move to the processing during operation)

FIG. 5

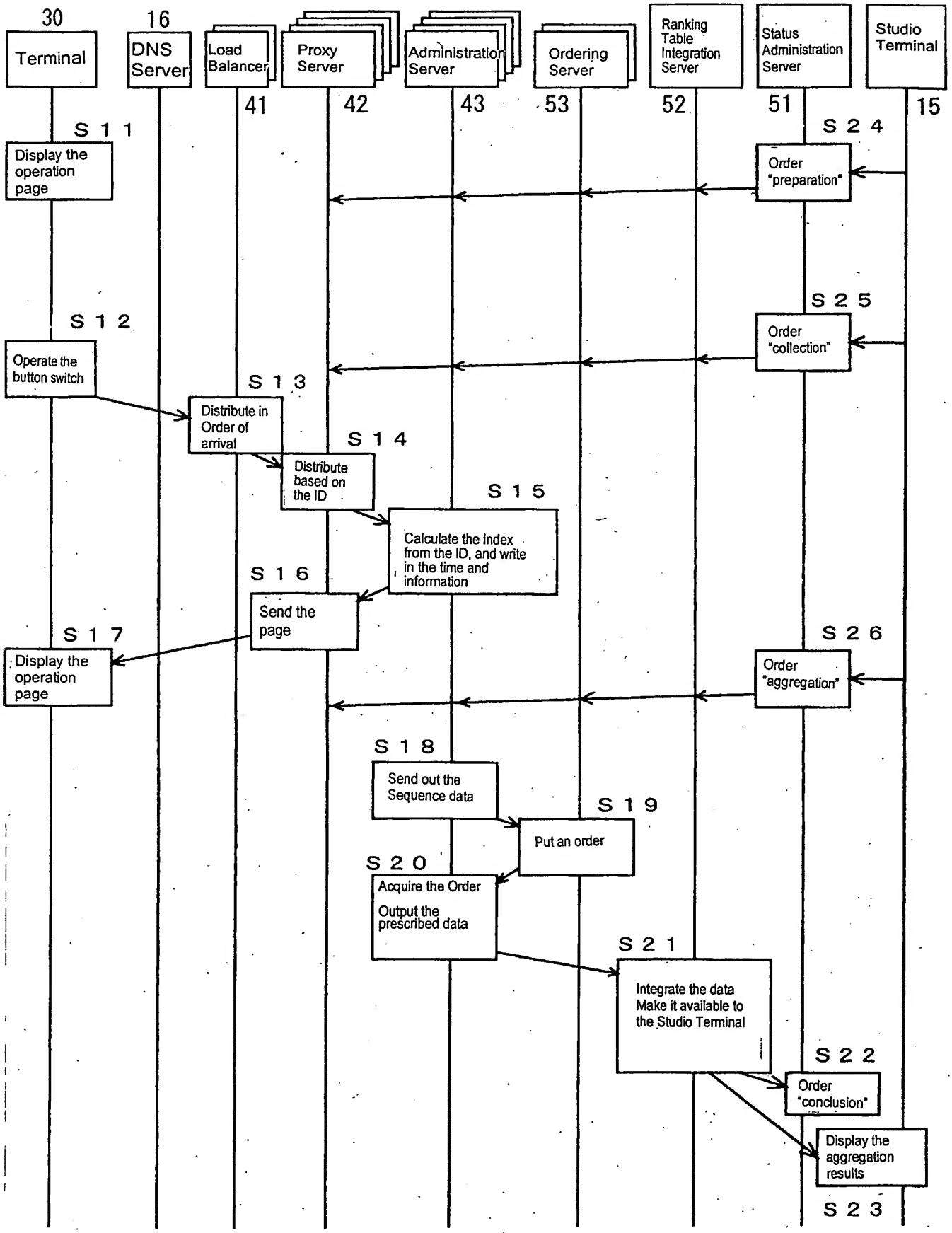

30
Terminal
16
DNS Server
Load Balancer
41
Proxy Server
42
Administration Server
43
Ordering Server
53
Ranking Table Integration Server
52
Status Administration Server
51
Studio Terminal
15
S 1 1
Display the operation page
S 1 2
Operate the button switch
S 1 3
Distribute in Order of arrival
S 1 4
Distribute based on the ID
S 1 5
Calculate the index from the ID, and write in the time and information
S 1 6
Send the page
S 1 7
Display the operation page
S 1 8
Send out the Sequence data
S 1 9
Put an order
S 2 0
Acquire the Order
Output the prescribed data
S 2 1
Integrate the data
Make it available to the Studio Terminal
S 2 2
Order "conclusion"
S 2 3
Display the aggregation results
S 2 4
Order "preparation"
S 2 5
Order "collection"
S 2 6
Order "aggregation"

FIG. 6

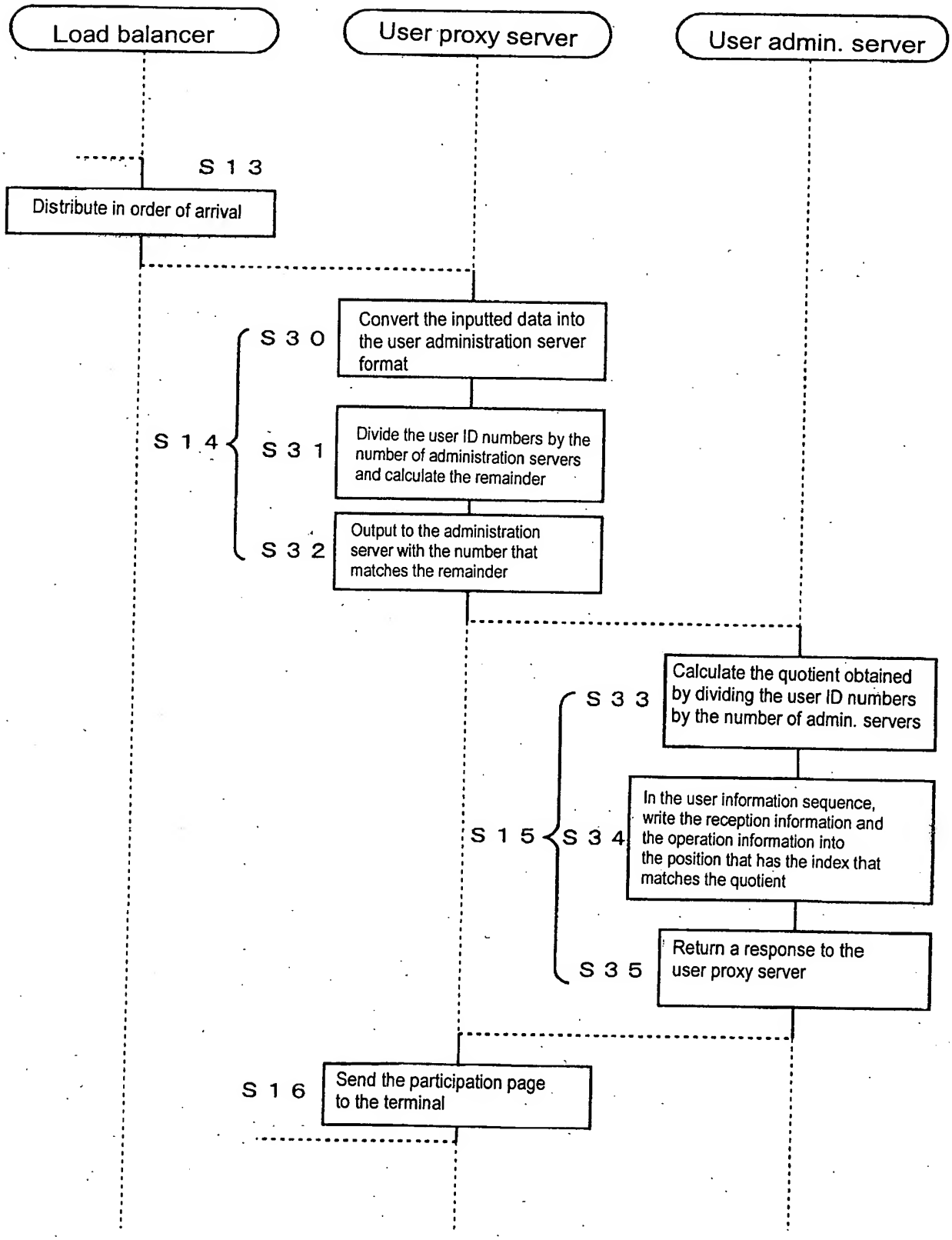

Load balancer
User proxy server
User admin. server
S13
Distribute in order of arrival
S14
S30
Convert the inputted data into the user administration server format
S31
Divide the user ID numbers by the number of administration servers and calculate the remainder
S32
Output to the administration server with the number that matches the remainder
S15
S33
Calculate the quotient obtained by dividing the user ID numbers by the number of admin. servers
S34
In the user information sequence, write the reception information and the operation information into the position that has the index that matches the quotient
S35
Return a response to the user proxy server
S16
Send the participation page to the terminal

FIG. 7

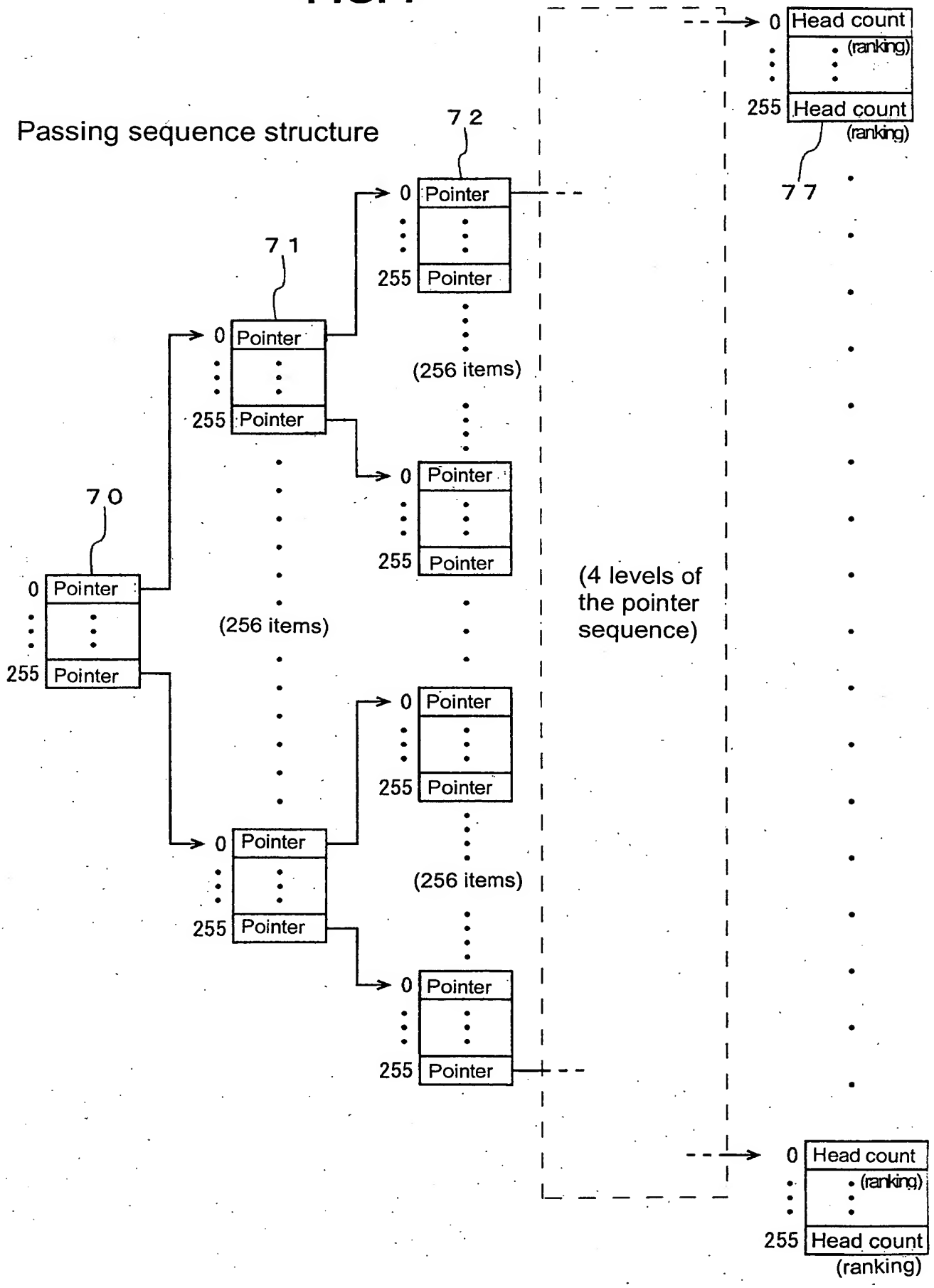
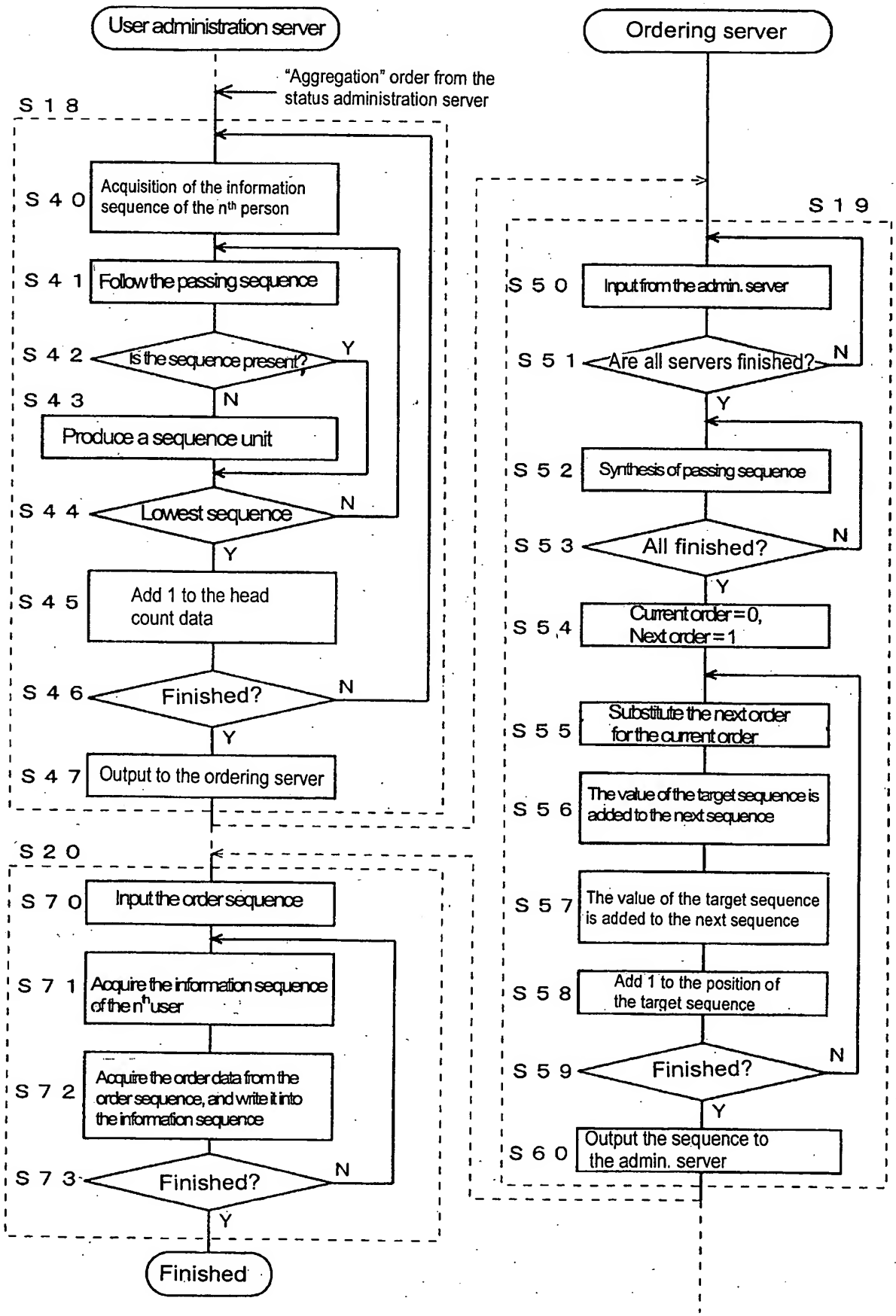

Passing sequence structure
70
71
72
77
0 Pointer
255 Pointer
(256 items)
(4 levels of the pointer sequence)
0 Head count
(ranking)
255 Head count
(ranking)

FIG. 8


User administration server
Ordering server
"Aggregation" order from the status administration server
S 1 8
S 4 0
Acquisition of the information sequence of the nth person
S 4 1
Follow the passing sequence
S 4 2
Is the sequence present?
Y
N
S 4 3
Produce a sequence unit
S 4 4
Lowest sequence
N
Y
S 4 5
Add 1 to the head count data
S 4 6
Finished?
N
Y
S 4 7
Output to the ordering server
S 1 9
S 5 0
Input from the admin. server
S 5 1
Are all servers finished?
N
Y
S 5 2
Synthesis of passing sequence
S 5 3
All finished?
N
Y
S 5 4
Current order = 0, Next order = 1
S 5 5
Substitute the next order for the current order
S 5 6
The value of the target sequence is added to the next sequence
S 5 7
The value of the target sequence is added to the next sequence
S 5 8
Add 1 to the position of the target sequence
S 5 9
Finished?
N
Y
S 6 0
Output the sequence to the admin. server
S 2 0
S 7 0
Input the order sequence
S 7 1
Acquire the information sequence of the nth user
S 7 2
Acquire the order data from the order sequence, and write it into the information sequence
S 7 3
Finished?
N
Y
Finished

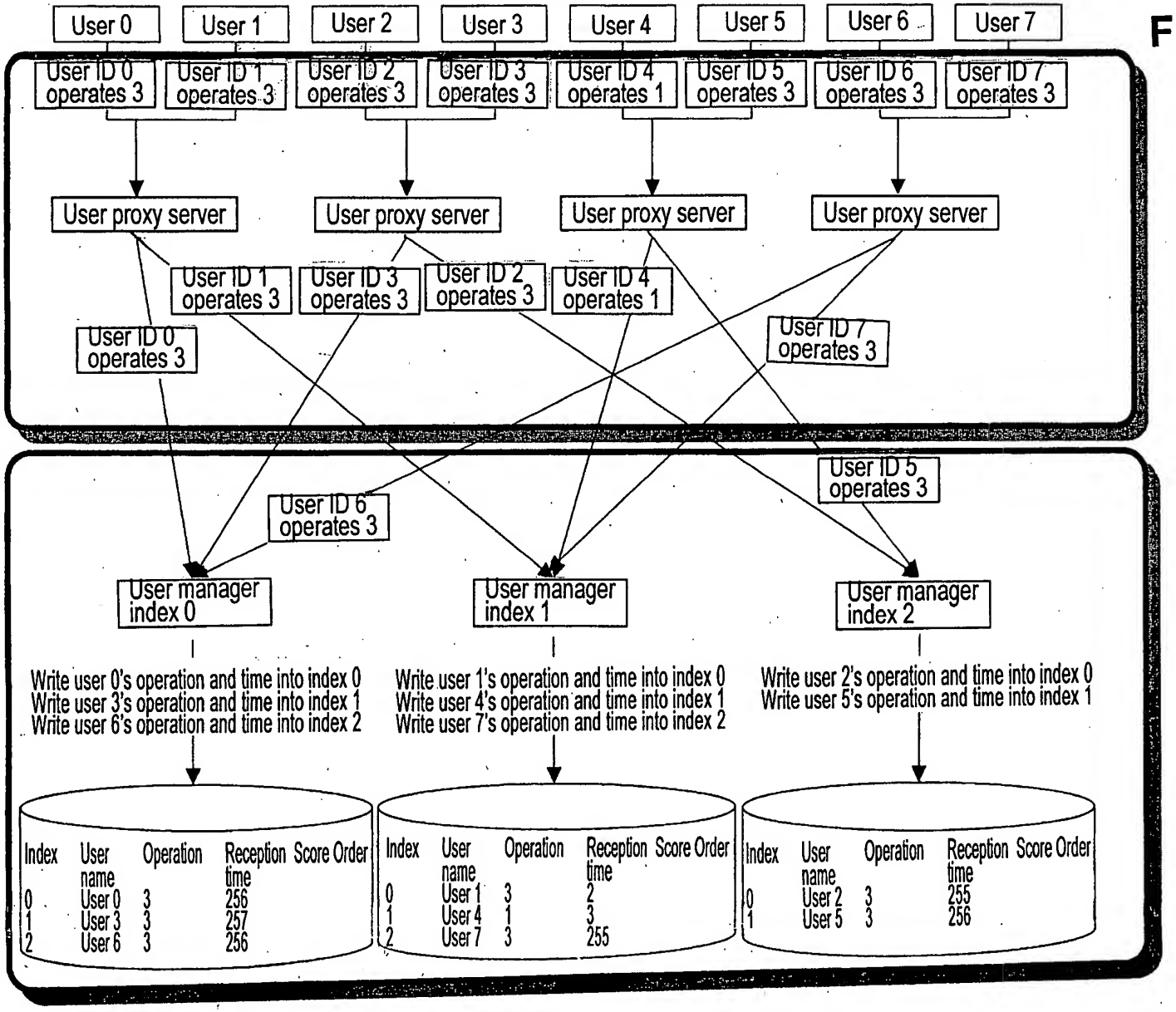
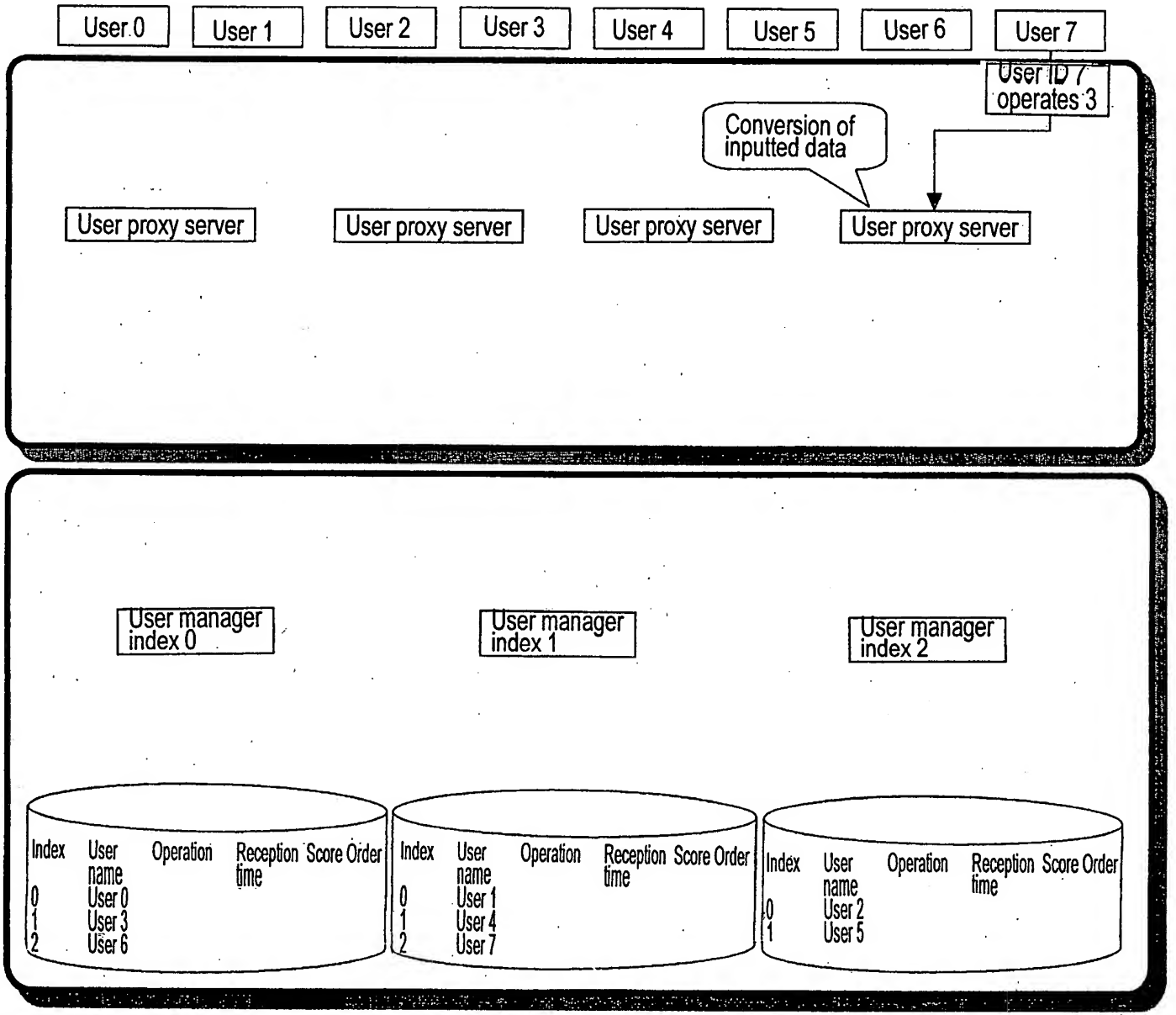


FIG. 9

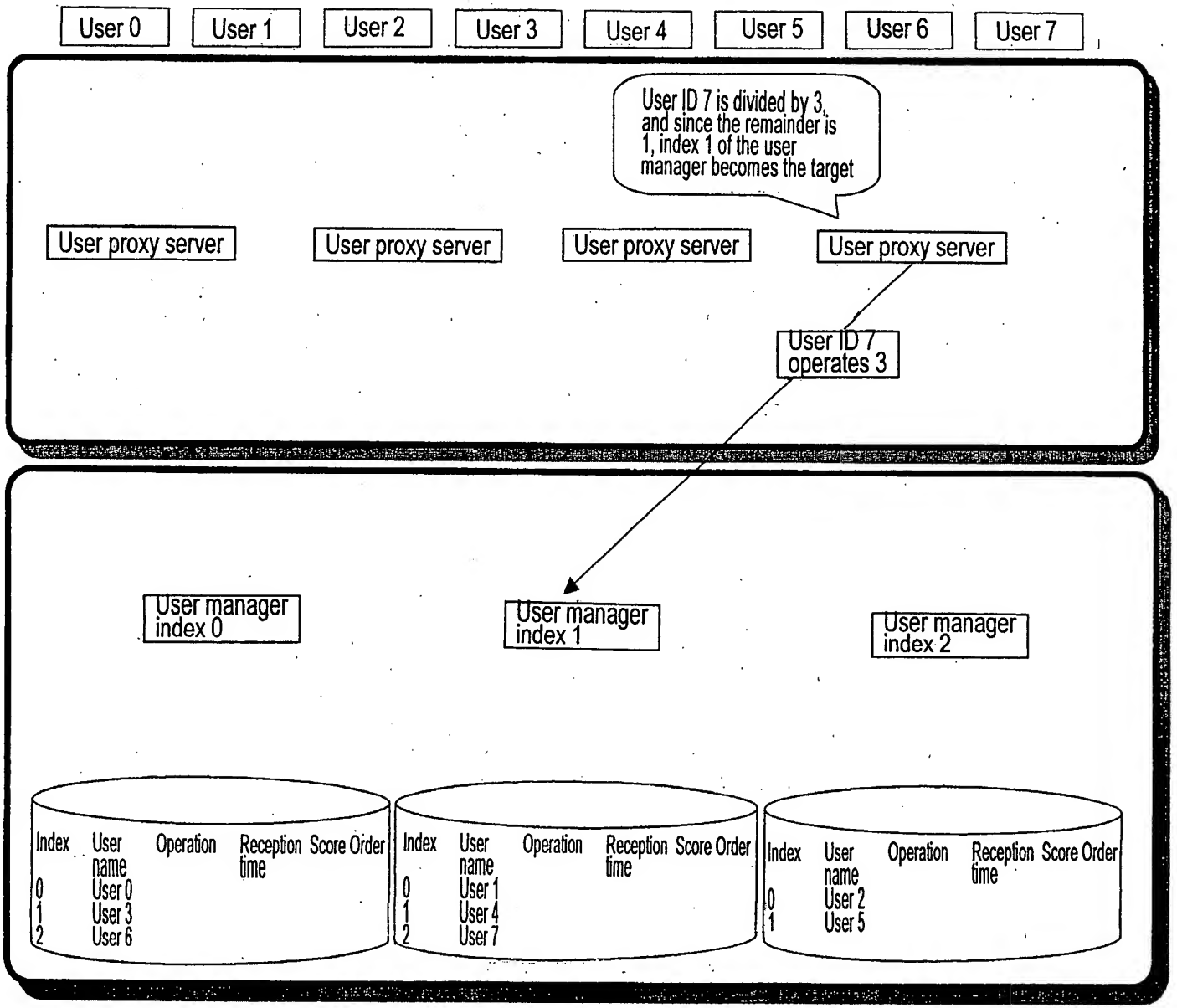
10/553422

FIG. 10



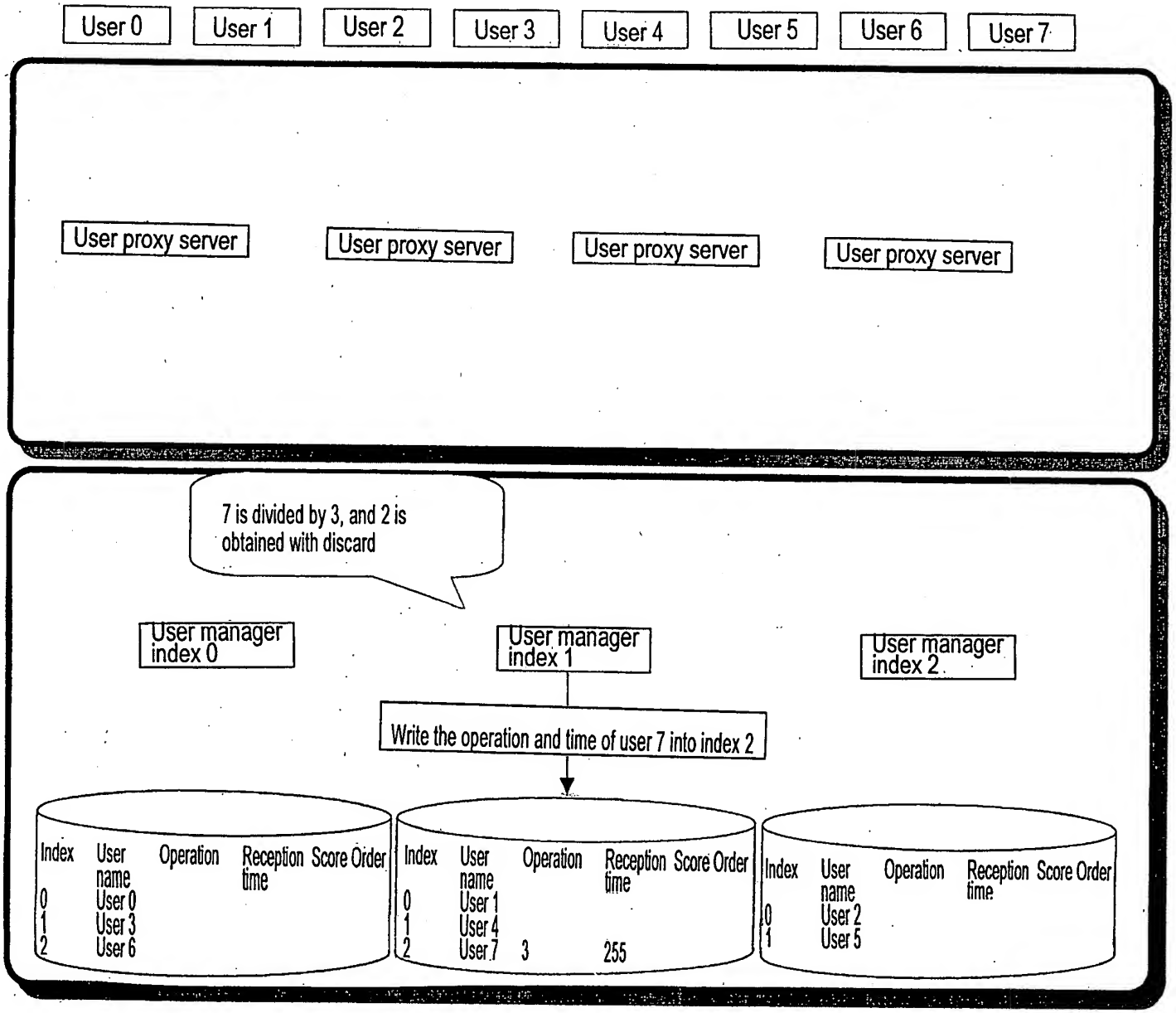
10/553422

FIG. 11



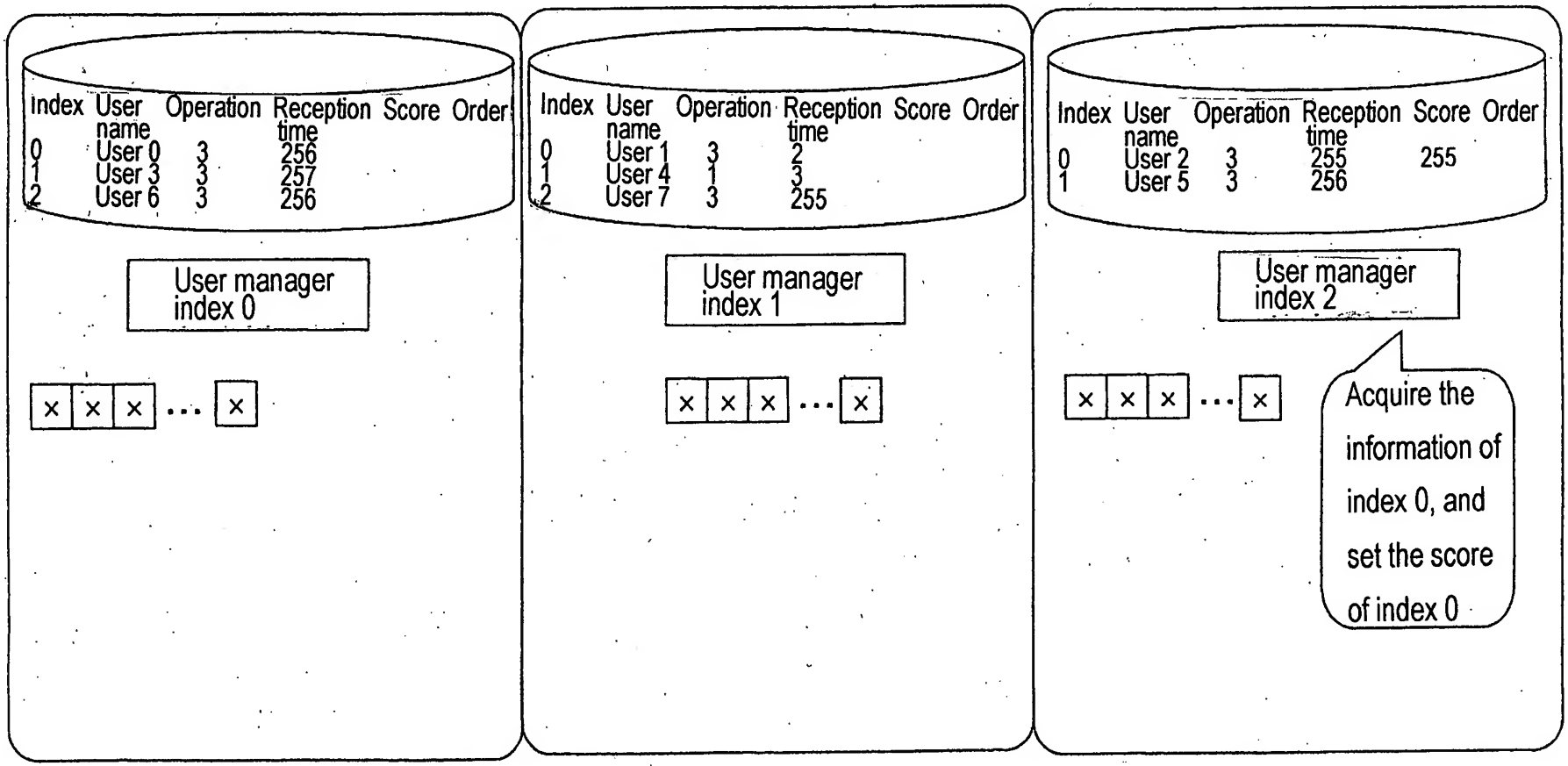
10/553422

FIG. 12



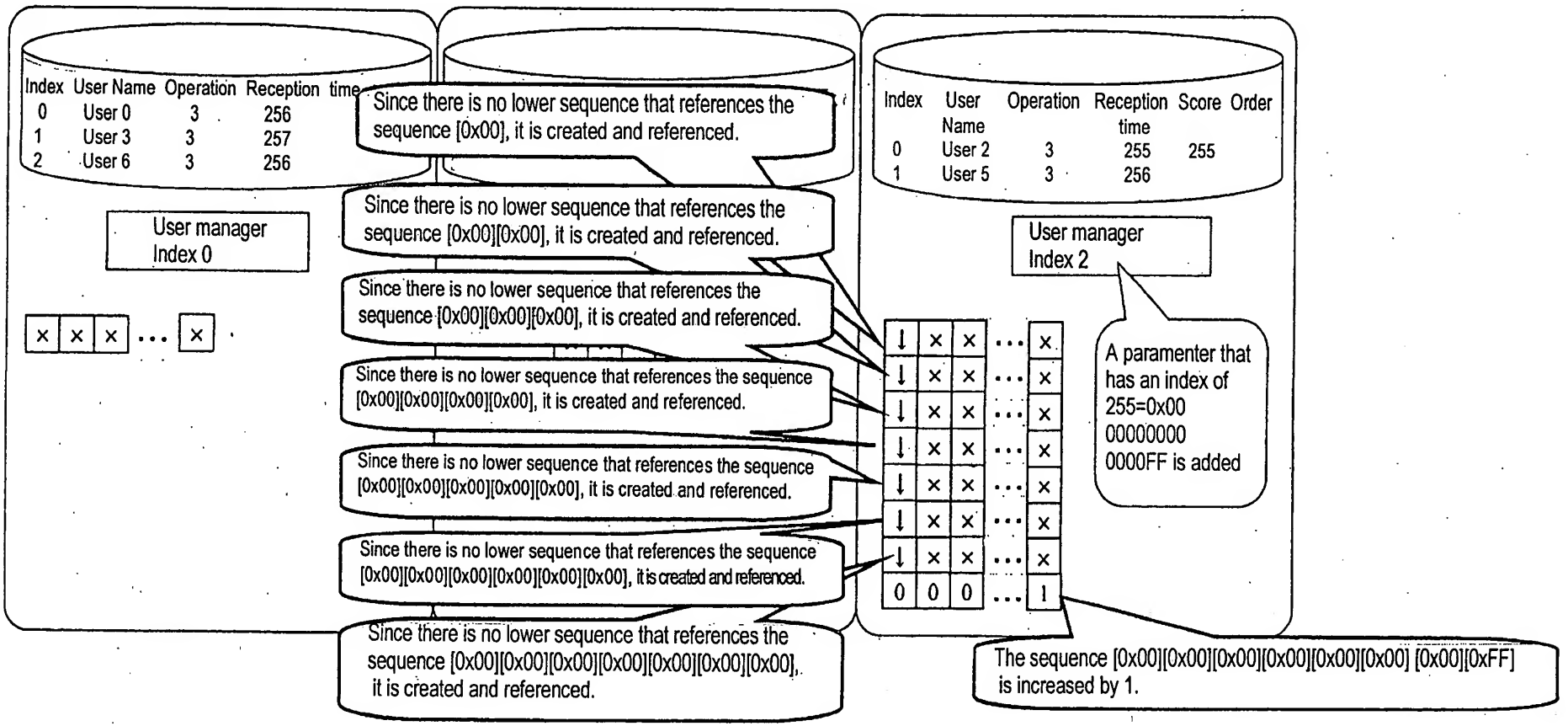
10/553422

Fig. 13



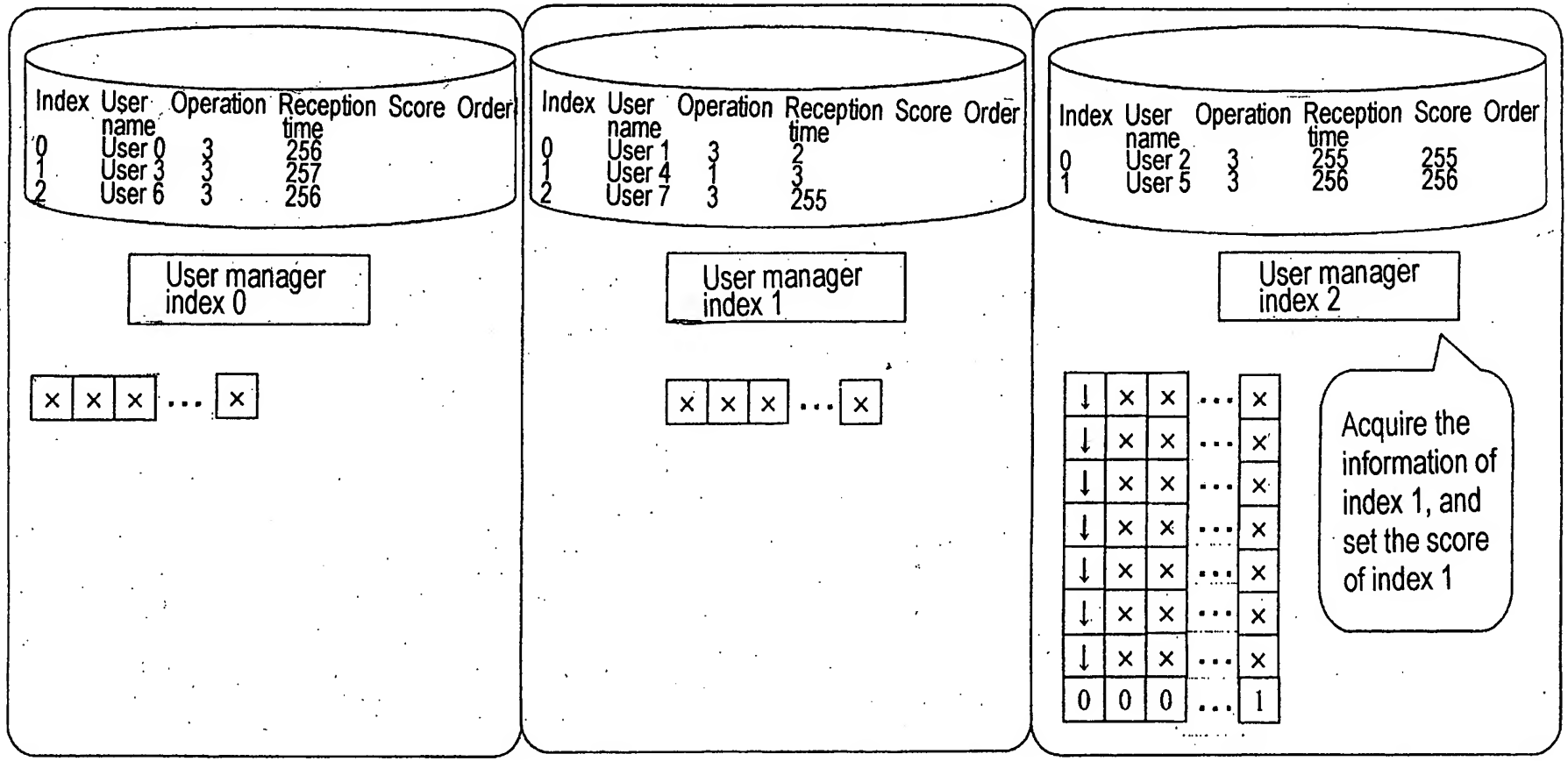
10/553422

FIG. 14



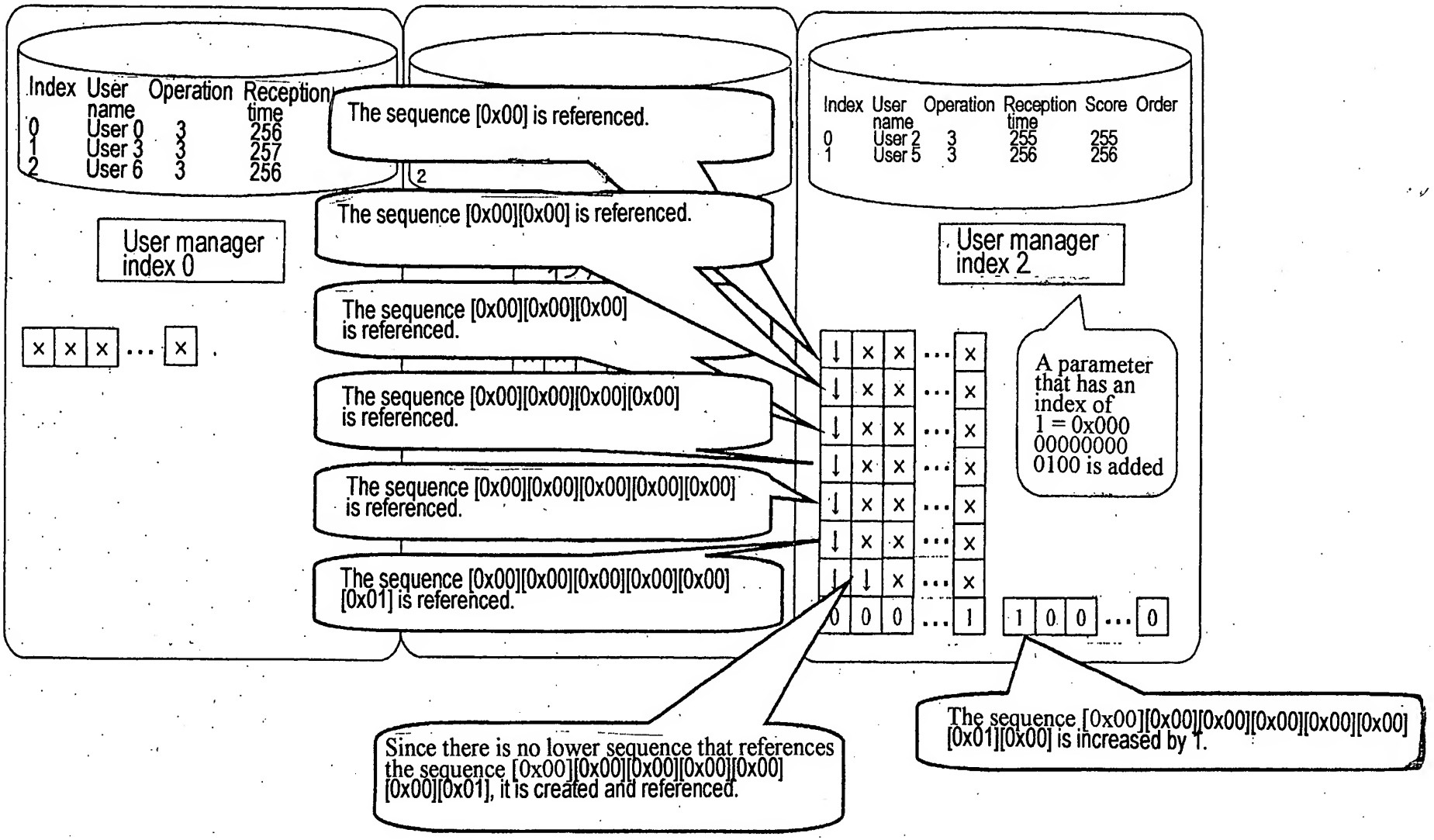
10/553122

Fig. 15



10/553422

Fig. 16



10/553422

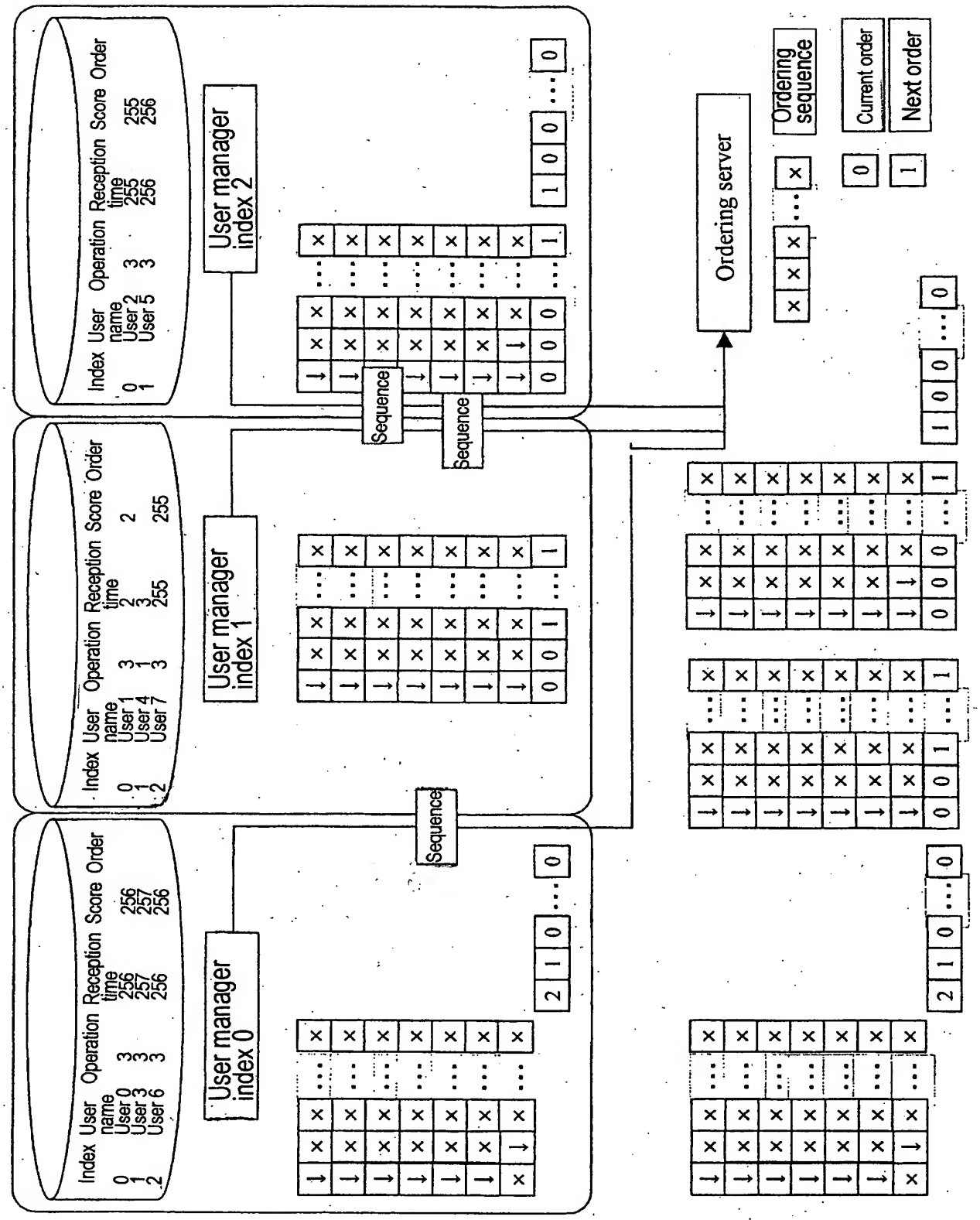
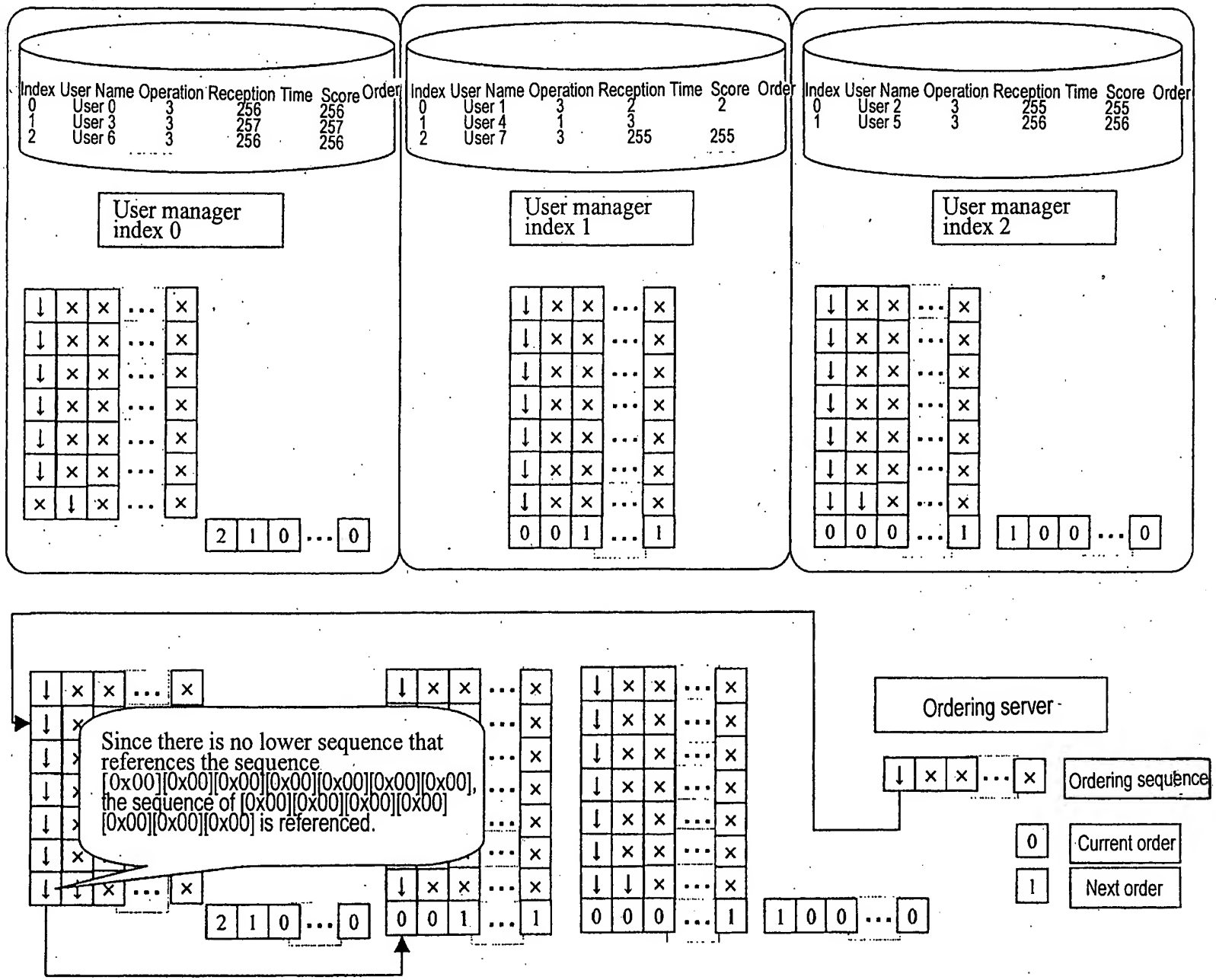

Index User name Operation Reception time Score Order
0 User 0 3 256
1 User 3 3 257
2 User 6 3 256
User manager index 0
Index User name Operation Reception time Score Order
0 User 1 3 2
1 User 4 1 3 255
2 User 7 3 255
User manager index 1
Index User name Operation Reception time Score Order
0 User 2 3 255 256
1 User 5 3 256 255
User manager index 2
Sequence
Sequence
Sequence
Ordering server
Ordering sequence
Current order
Next order

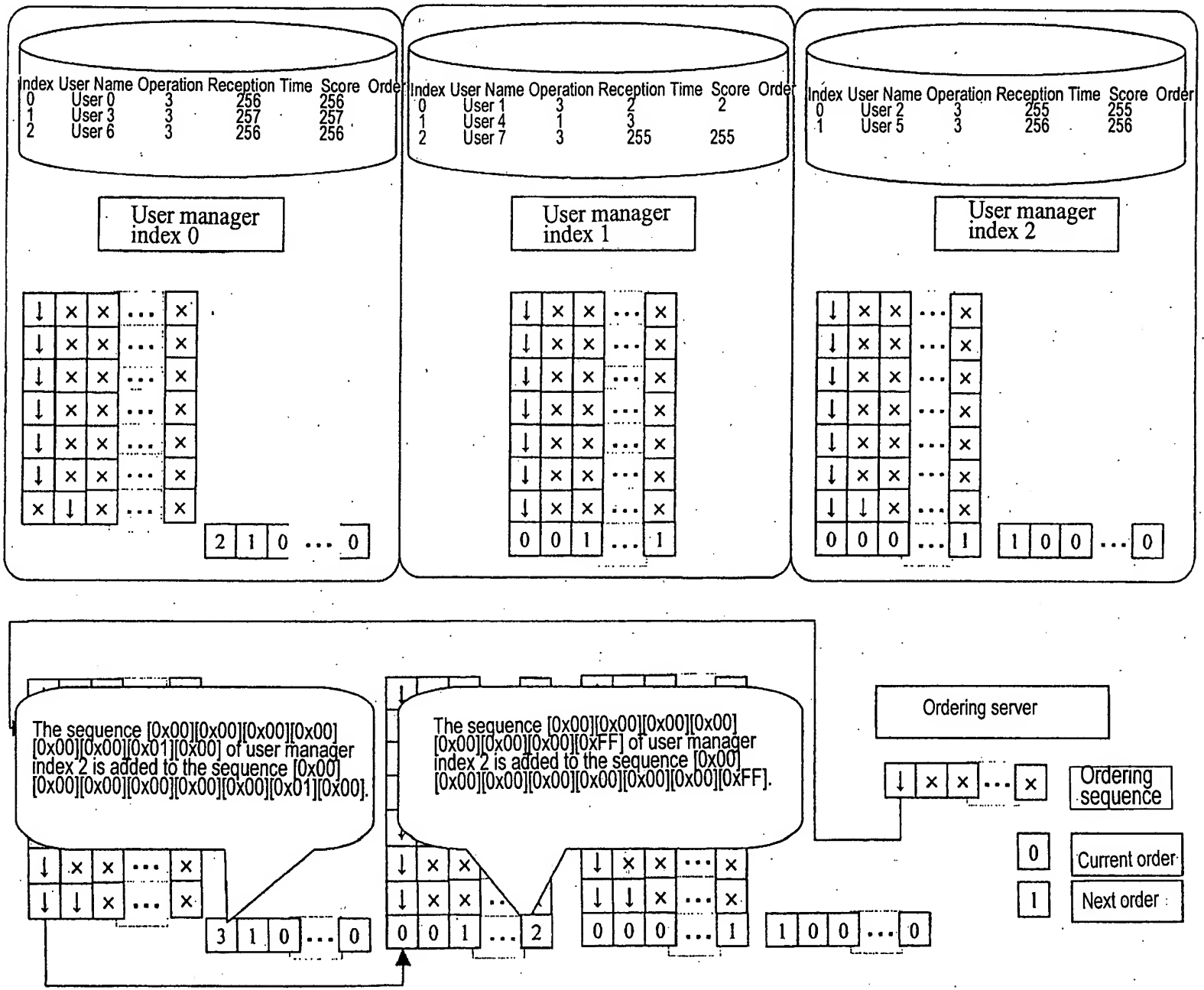
Fig. 17

FIG. 18



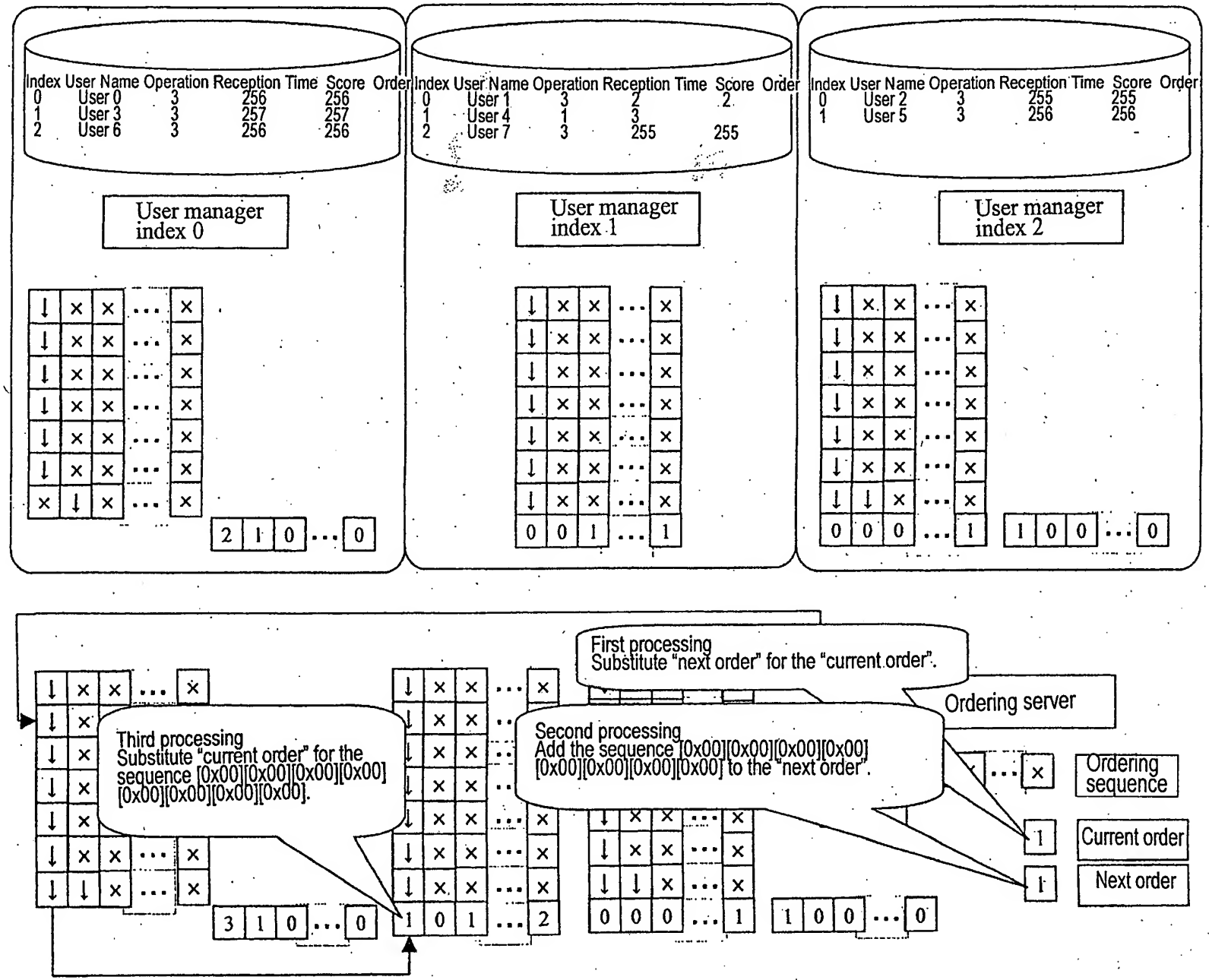
10/553422

FIG. 19



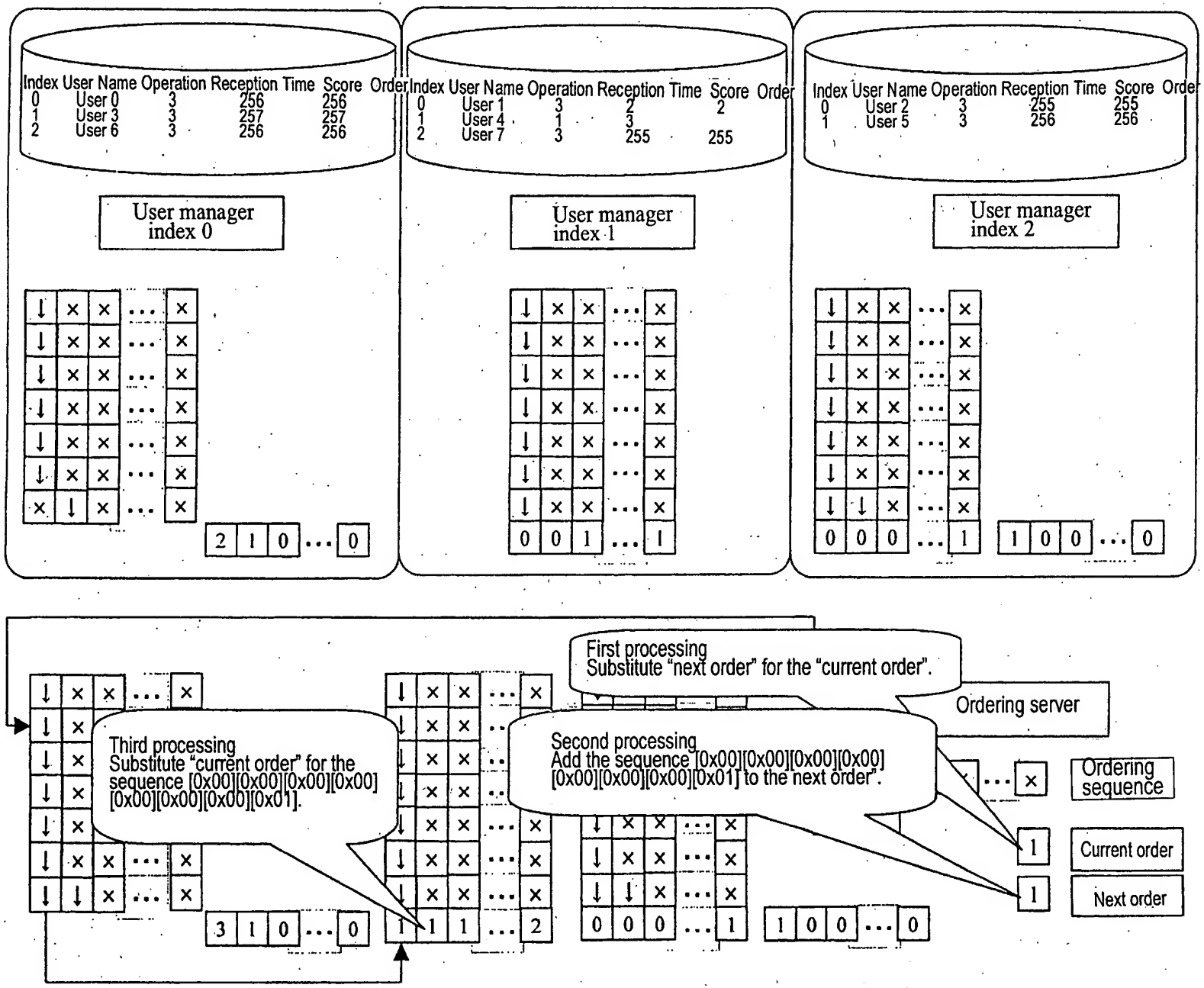
10/553422

FIG. 20



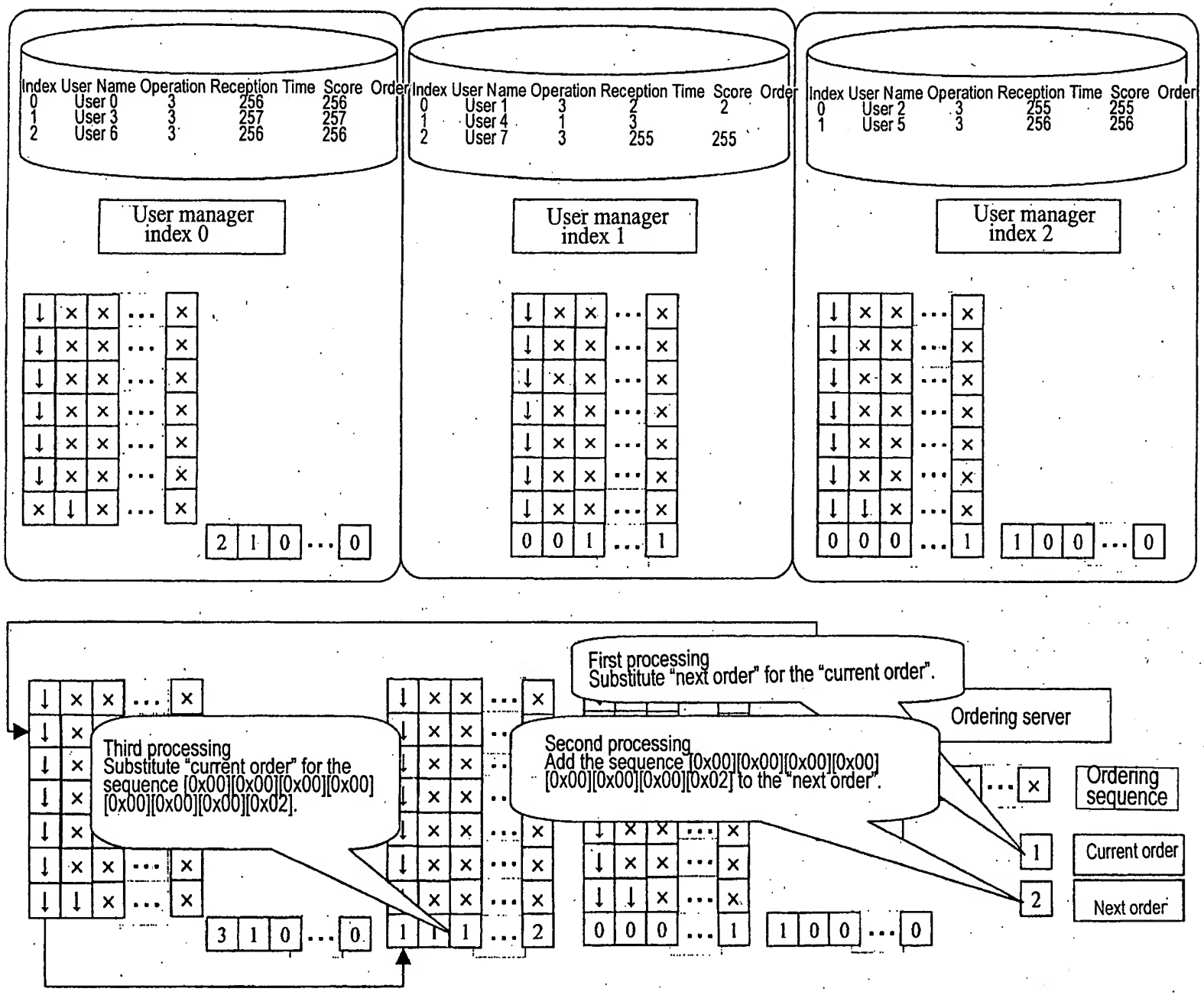
10/553422

FIG. 21



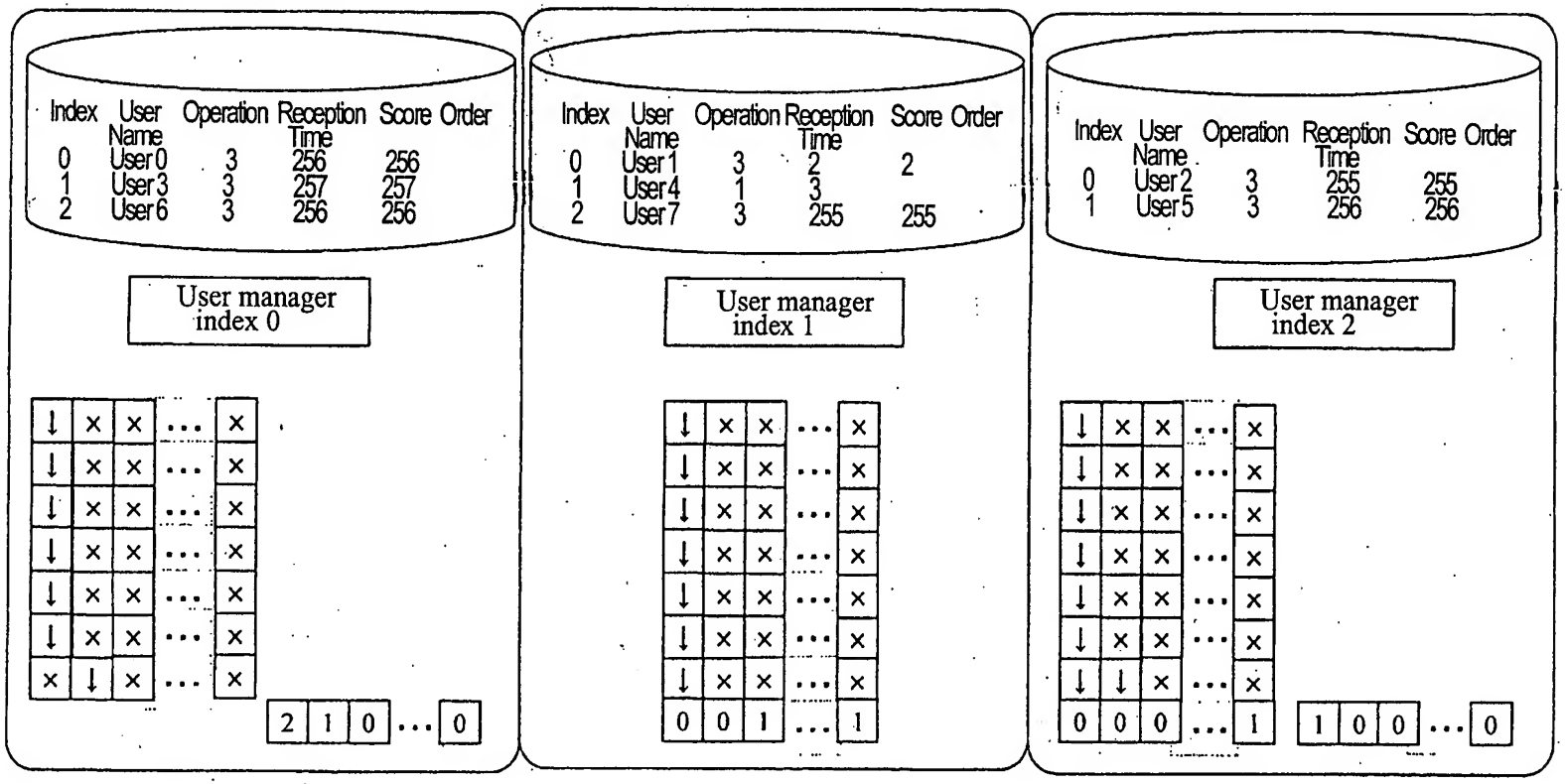
10/553422

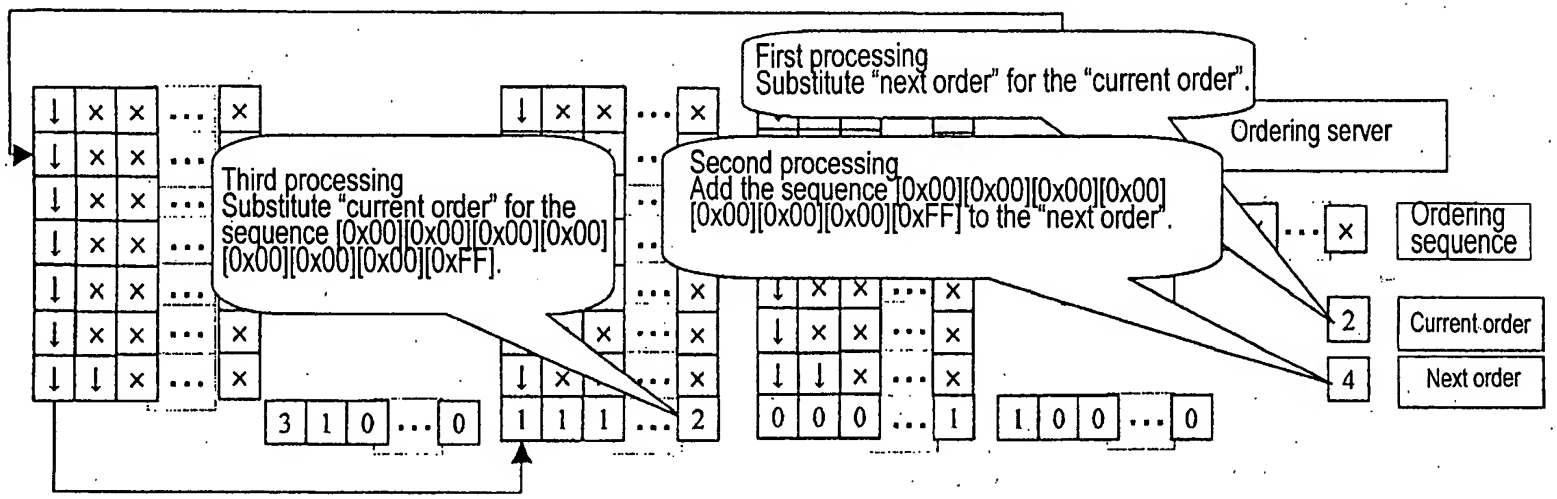
FIG. 22



10/553422

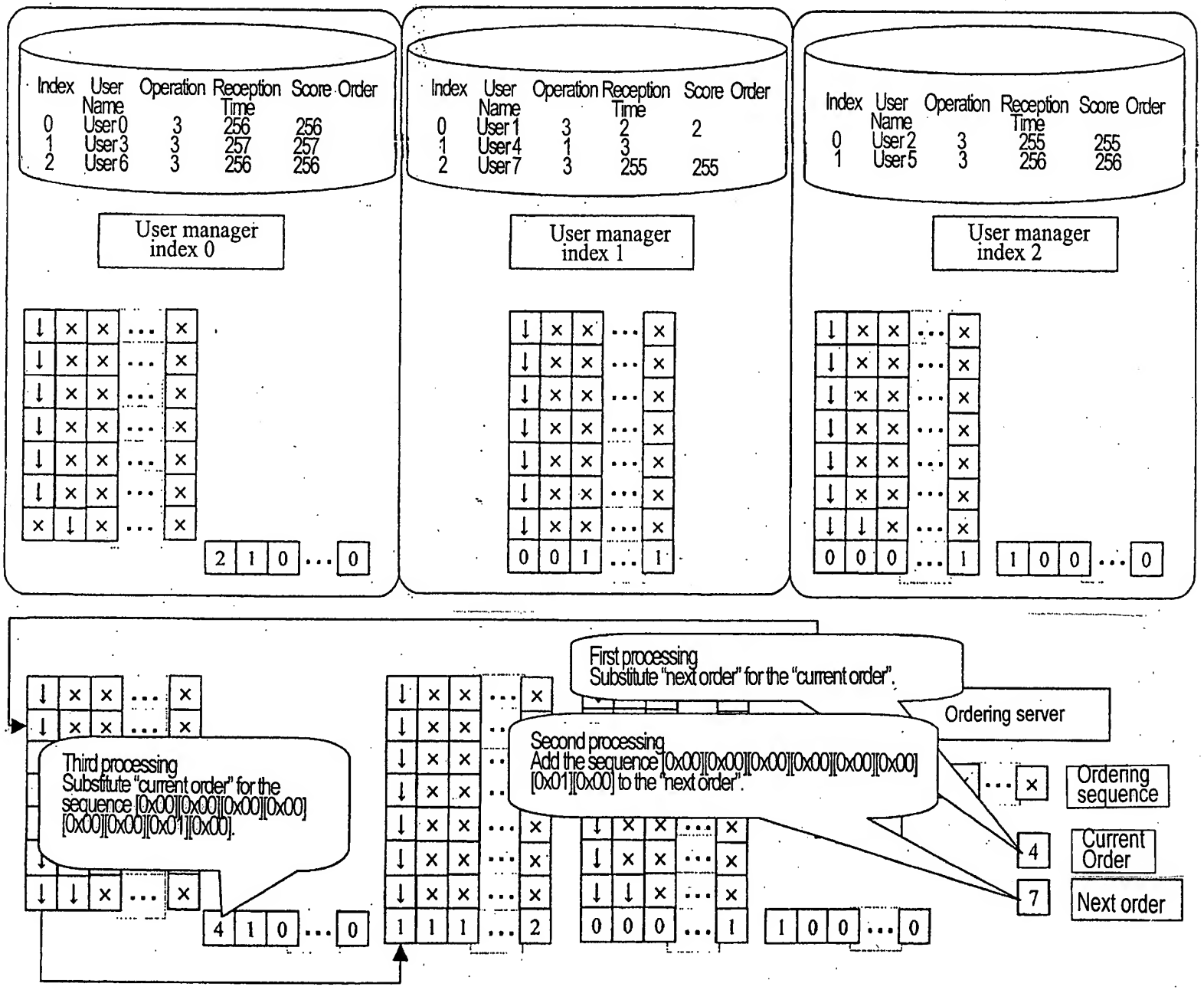
FIG. 23





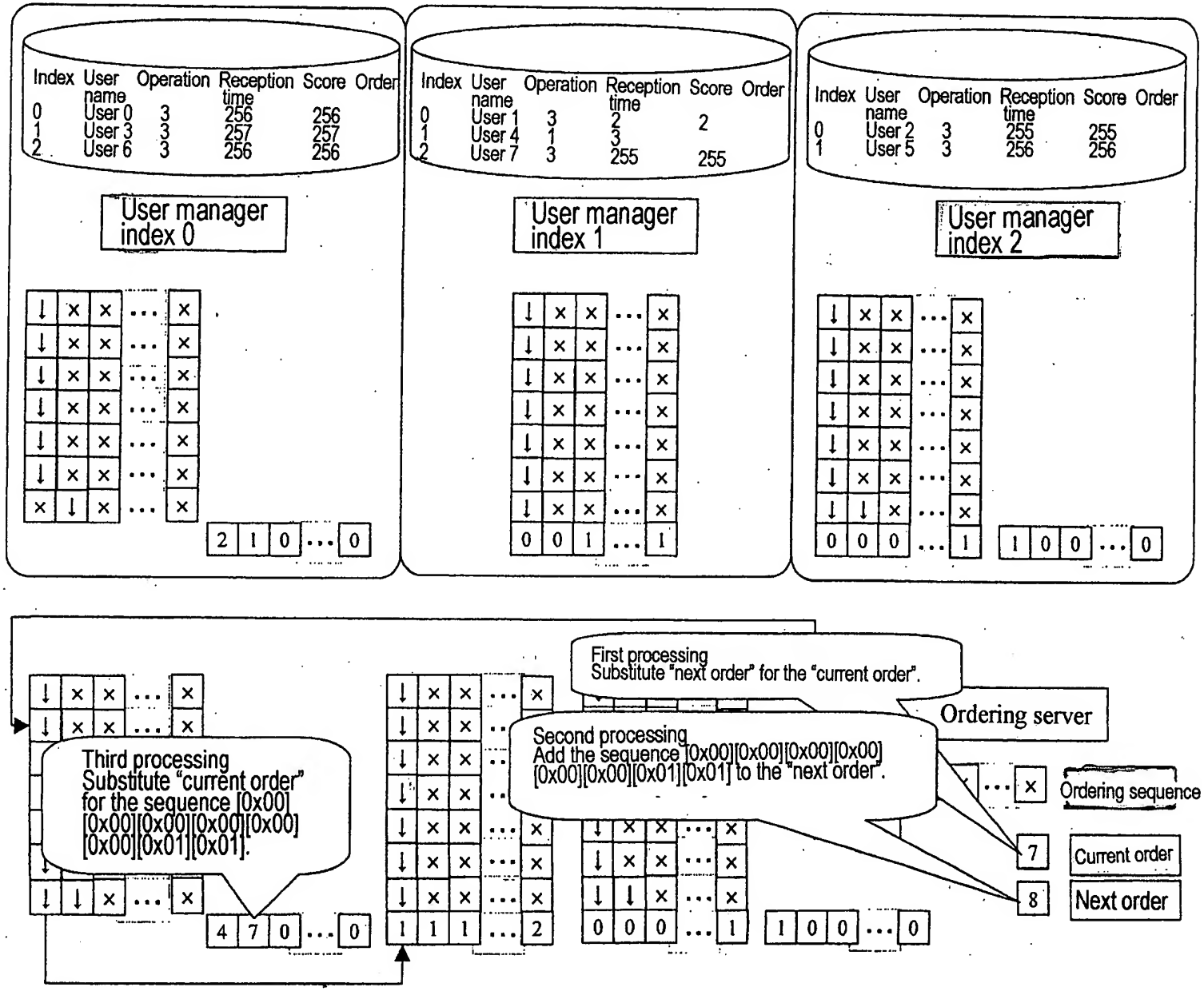
10/553422

FIG. 24



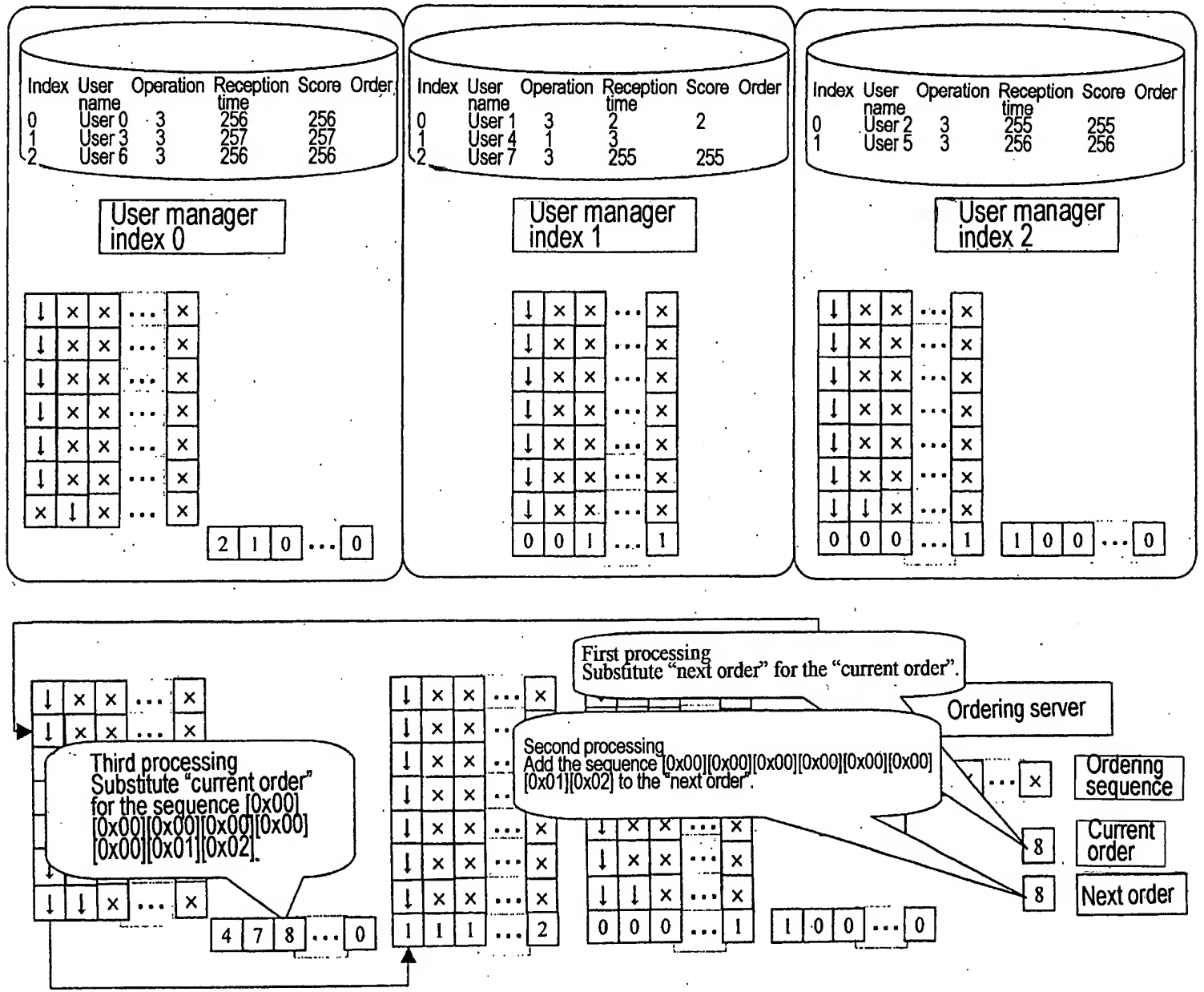
10/553422

Fig. 25



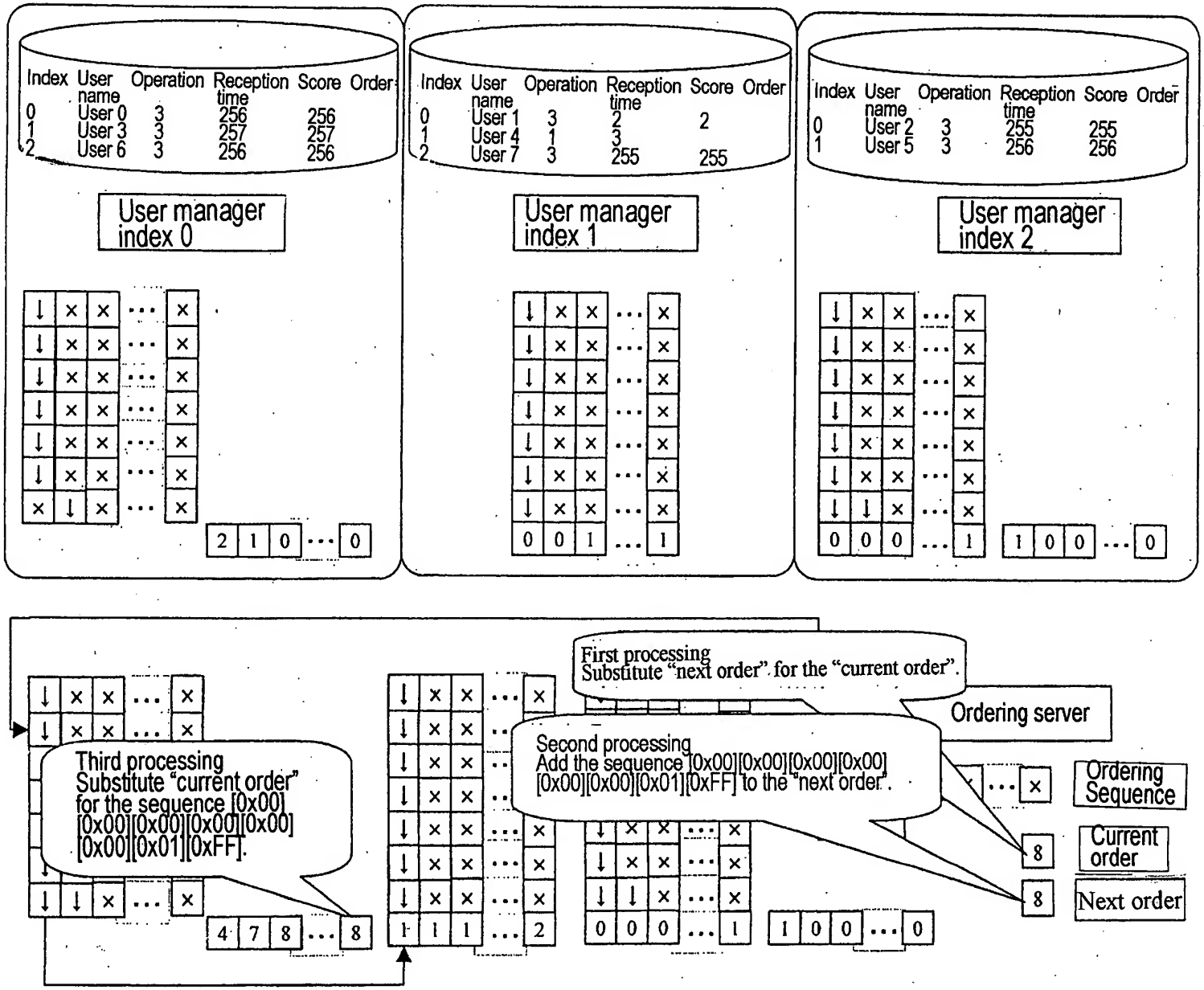
10/553422

Fig. 26



10/553422

Fig. 27



10/553422

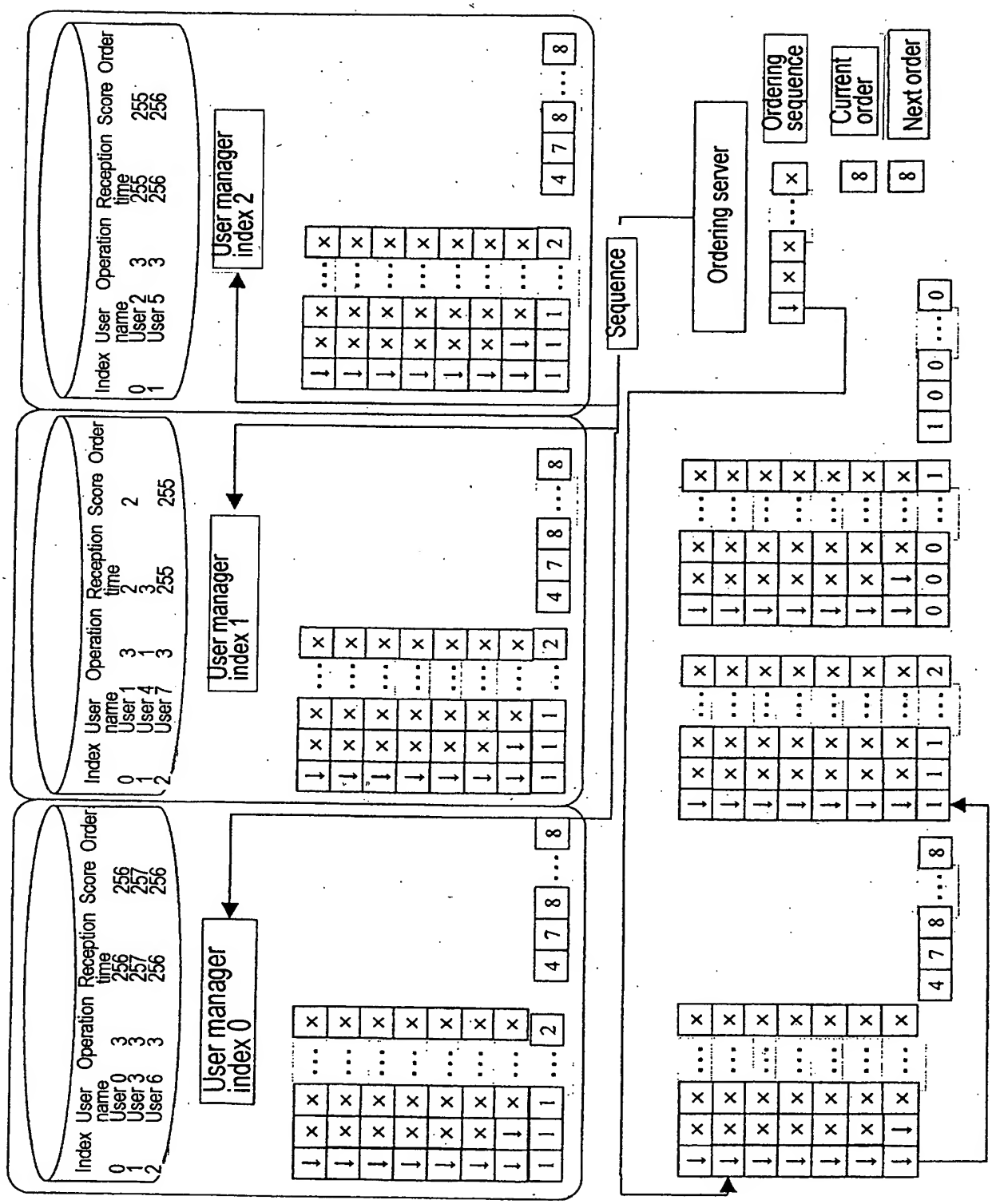
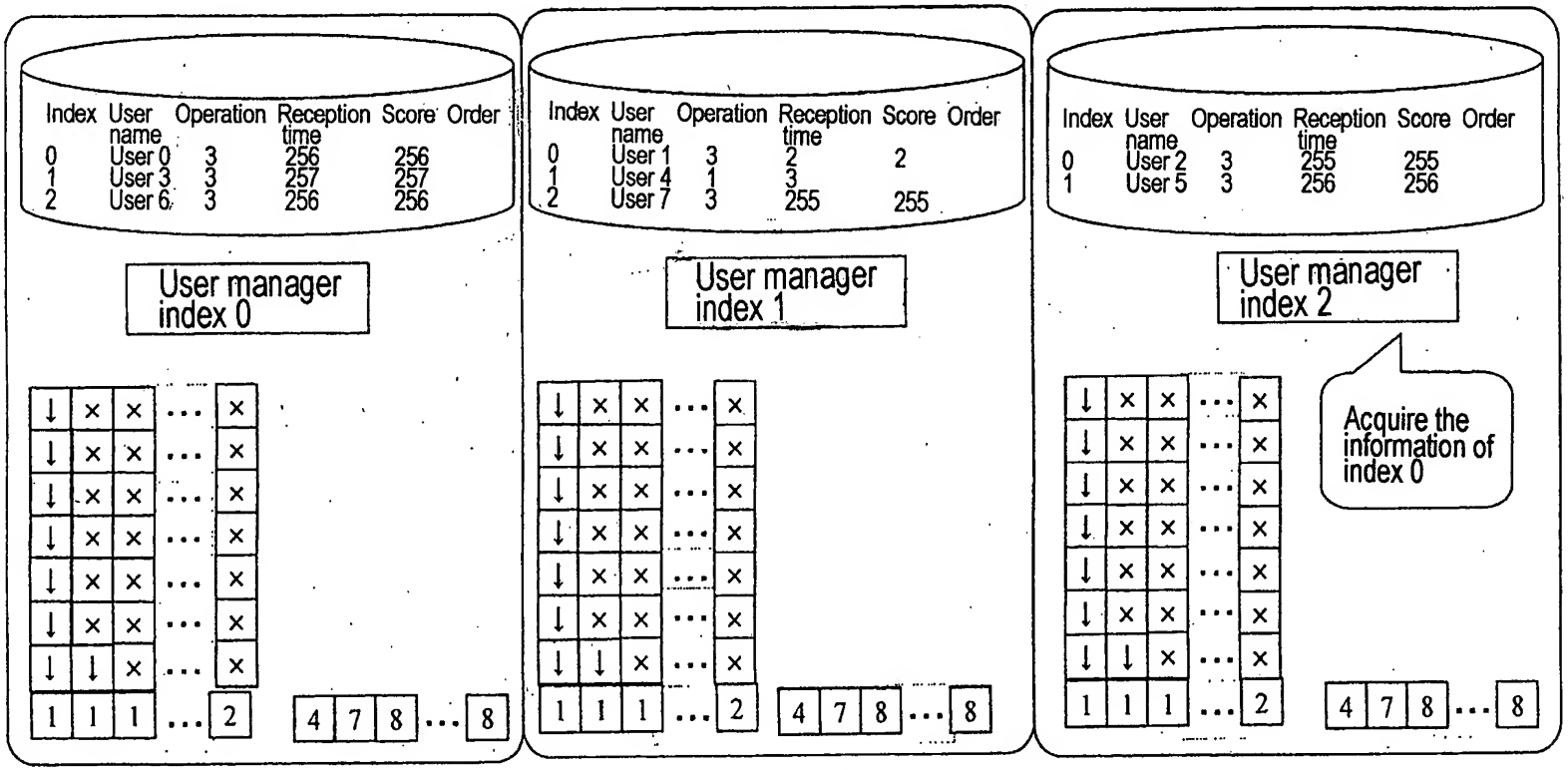

Index User name Operation Reception time Score Order
0 User 0 3 256
1 User 3 3 257
2 User 6 3 256
User manager index 0
Index User name Operation Reception time Score Order
0 User 1 3 2
1 User 4 1 3 255
2 User 7 3 255
User manager index 1
Index User name Operation Reception time Score Order
0 User 2 3 255
1 User 5 3 256
User manager index 2
Sequence
Ordering server
Ordering sequence
Current order
Next order

Fig. 28

Fig. 29



10/553422

FIG. 30

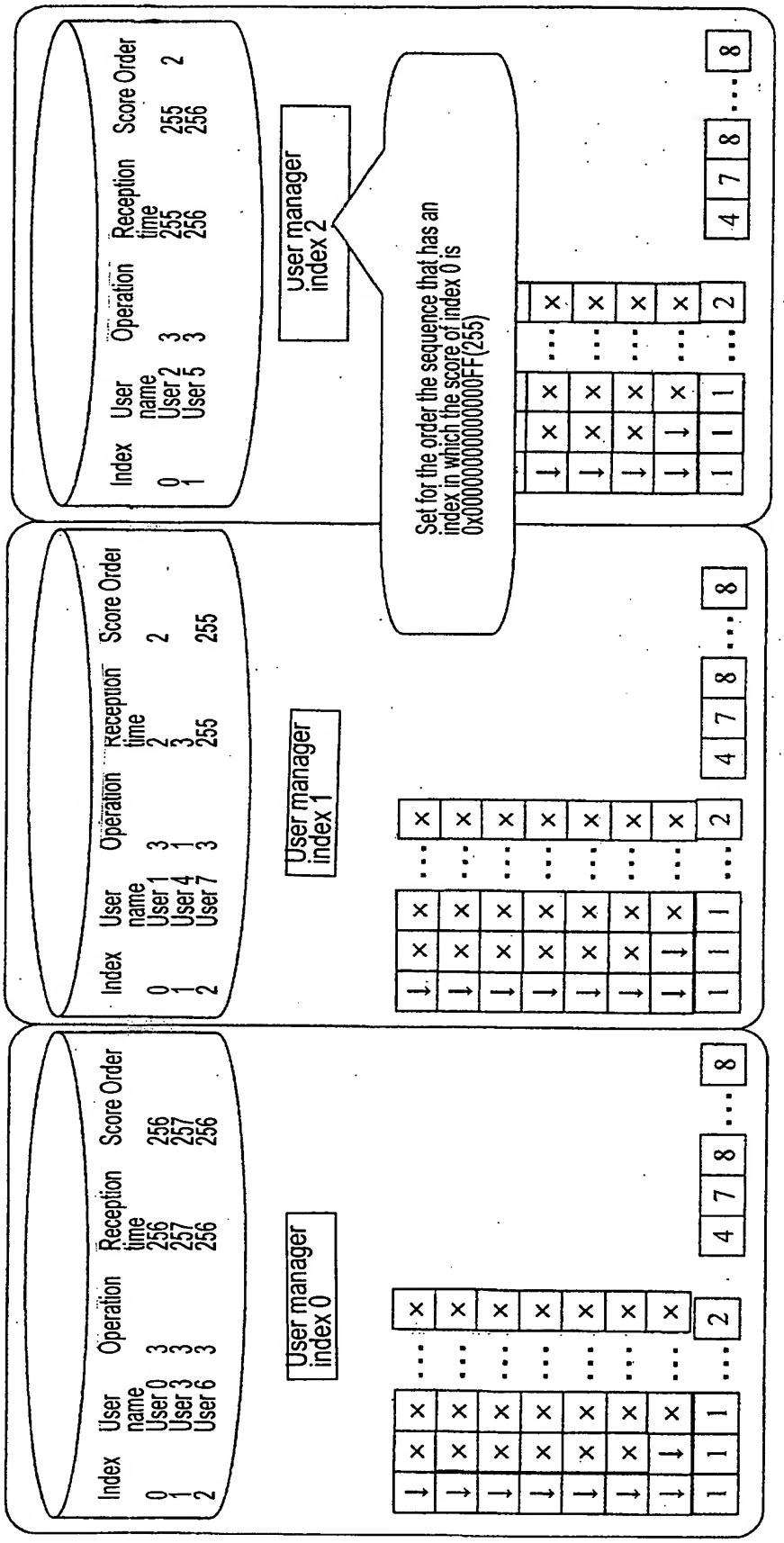

Index
User name
Operation
Reception time
Score Order
0
1
2
User 0
User 3
User 6
3
3
3
256
257
256
User manager index 0
User 1
User 4
User 7
3
1
3
2
3
255
255
User manager index 1
User 5
User 2
User 3
User 3
255
256
User manager index 2
Set for the order the sequence that has an index in which the score of index 0 is 0x00000000000000FF(255)
4
7
8
...

FIG. 31

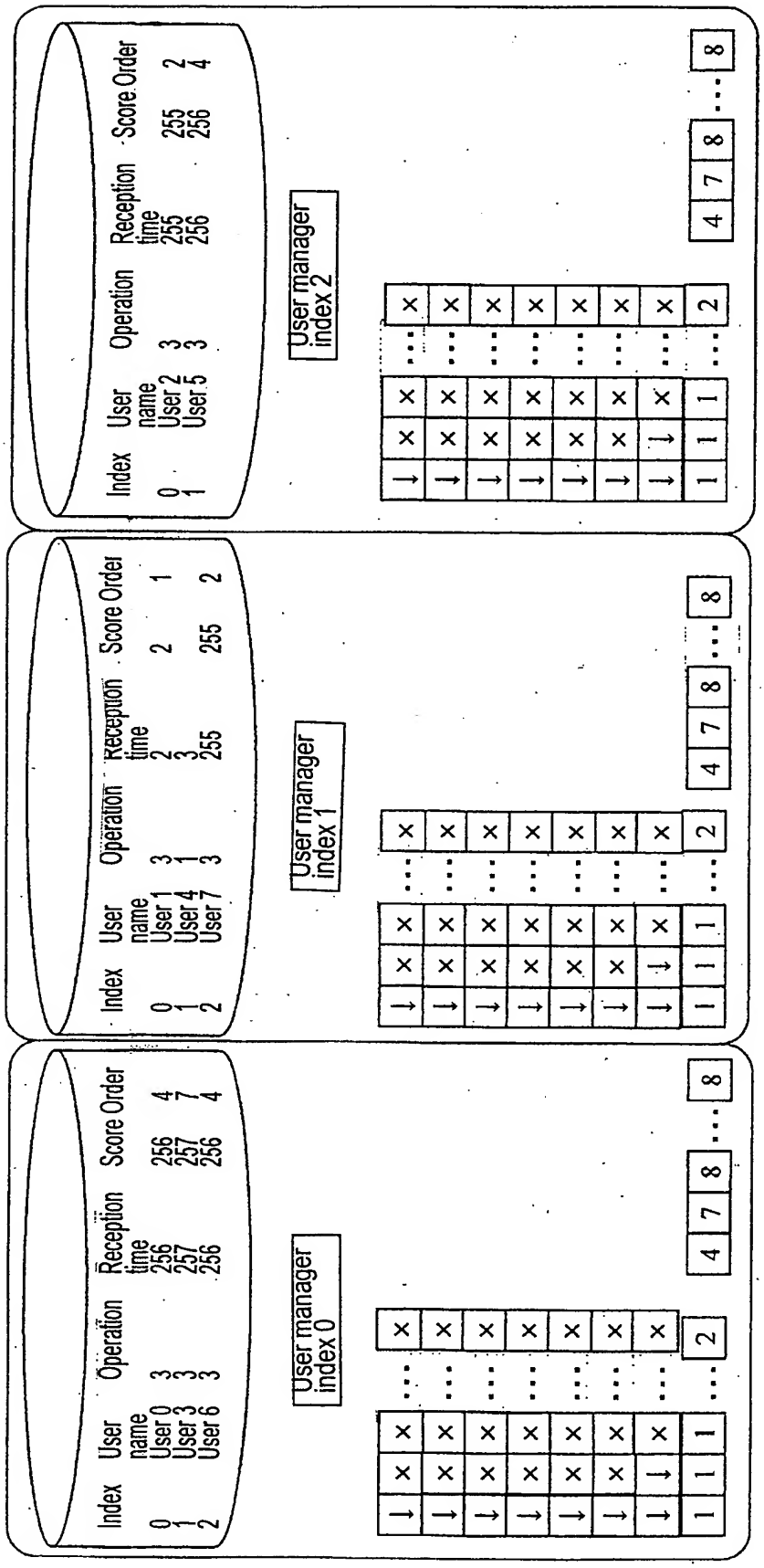

Index
User name
Operation
Reception time
Score Order
0
User 0
3
256
4
1
User 3
3
257
7
2
User 6
3
256
4
User manager index 0
Index
User name
Operation
Reception time
Score Order
0
User 1
3
2
1
1
User 4
1
3
2
User 7
3
255
2
User manager index 1
Index
User name
Operation
Reception time
Score Order
0
User 2
3
255
2
1
User 5
3
256
4
User manager index 2

FIG. 32

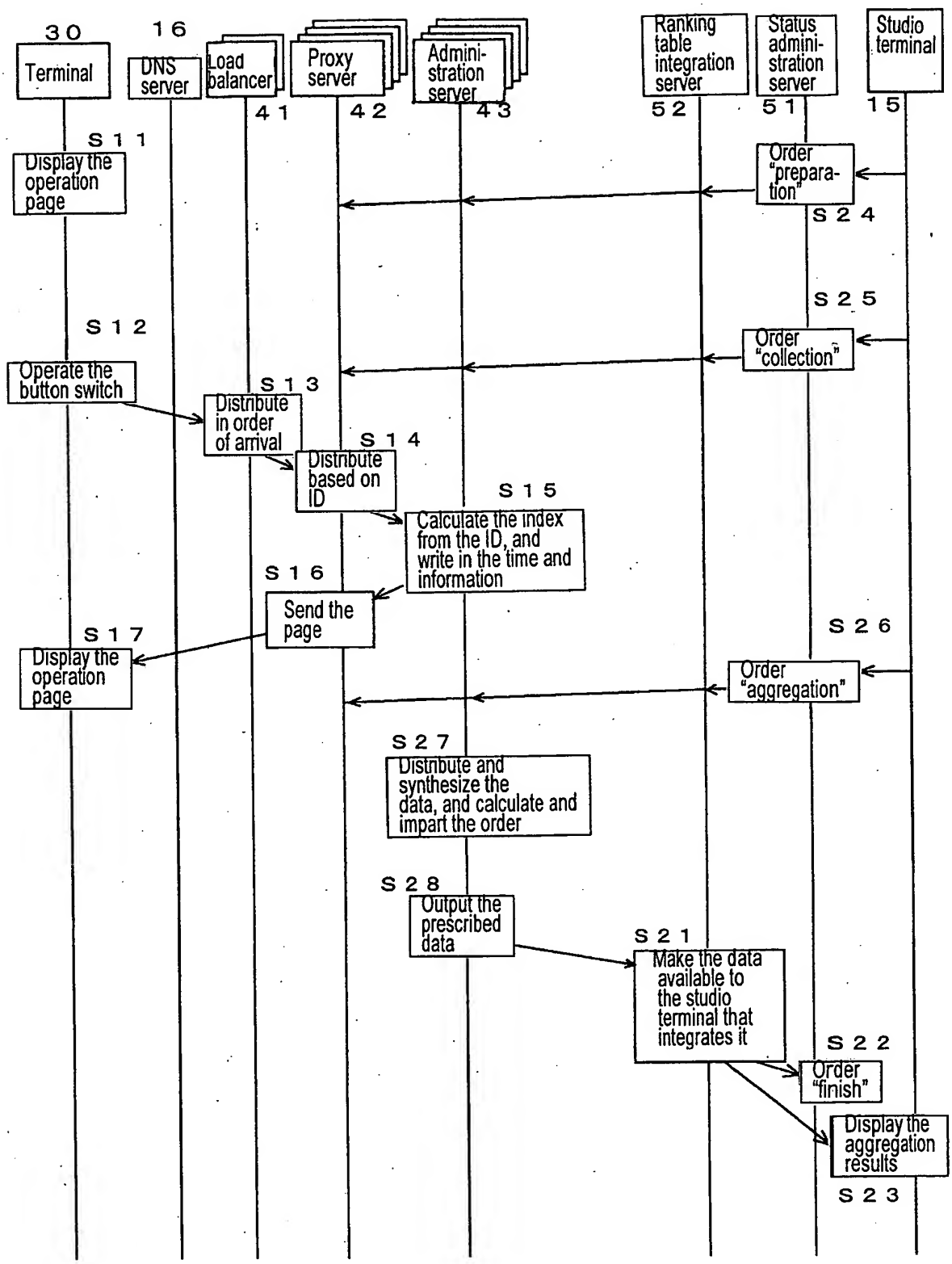

30
Terminal
16
DNS server
Load balancer
41
Proxy server
42
Administration server
43
Ranking table integration server
52
Status administration server
51
Studio terminal
15
S11
Display the operation page
Order "preparation"
S24
S25
S12
Order "collection"
Operate the button switch
S13
Distribute in order of arrival
S14
Distribute based on ID
S15
Calculate the index from the ID, and write in the time and information
S16
Send the page
S17
Display the operation page
S26
Order "aggregation"
S27
Distribute and synthesize the data, and calculate and impart the order
S28
Output the prescribed data
S21
Make the data available to the studio terminal that integrates it
S22
Order "finish"
Display the aggregation results
S23

FIG. 33

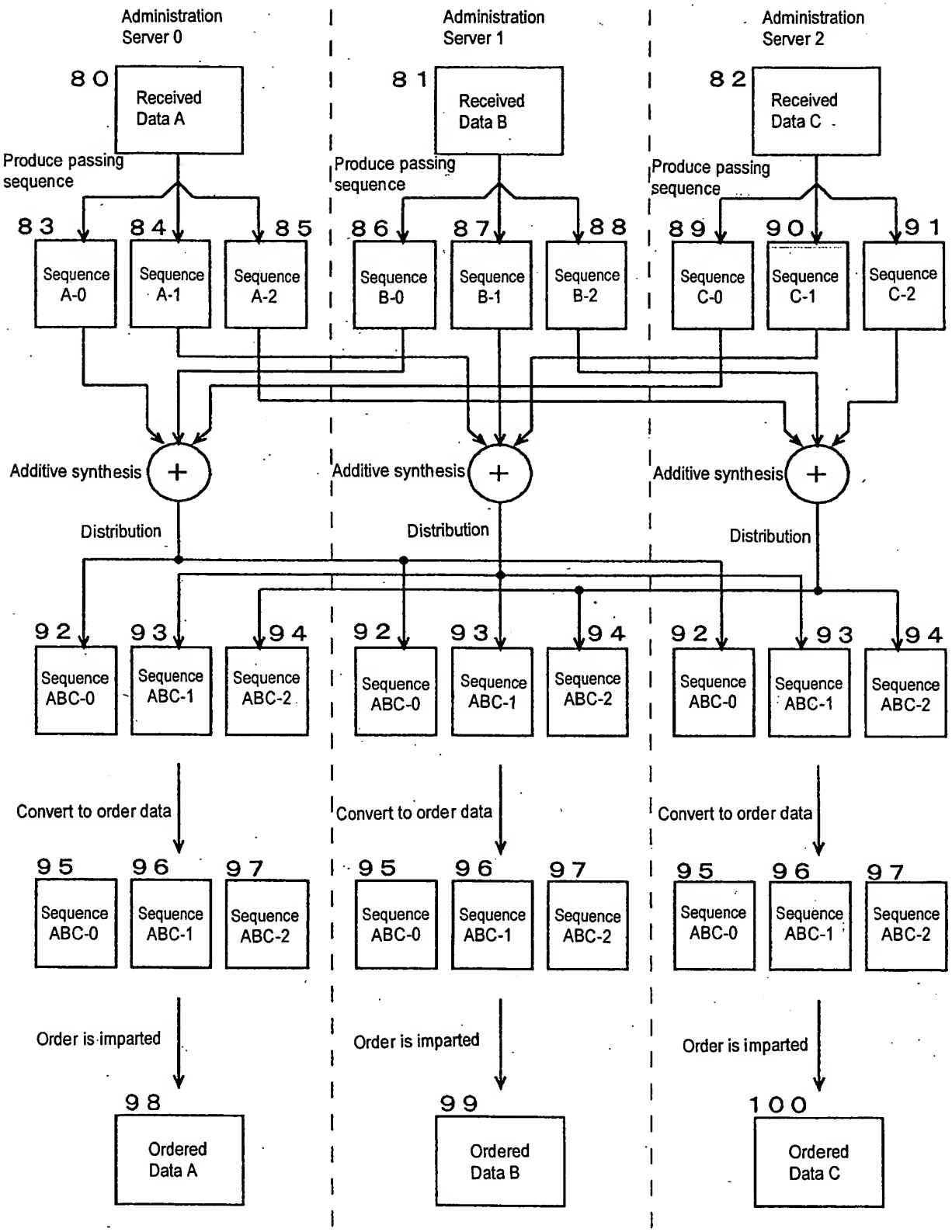

Administration Server 0
Administration Server 1
Administration Server 2
80
Received Data A
81
Received Data B
82
Received Data C
Produce passing sequence
Produce passing sequence
Produce passing sequence
83
84
85
86
87
88
89
90
91
Sequence A-0
Sequence A-1
Sequence A-2
Sequence B-0
Sequence B-1
Sequence B-2
Sequence C-0
Sequence C-1
Sequence C-2
Additive synthesis
Additive synthesis
Additive synthesis
Distribution
Distribution
Distribution
92
93
94
Sequence ABC-0
Sequence ABC-1
Sequence ABC-2
Convert to order data
Convert to order data
Convert to order data
95
96
97
Order is imparted
Order is imparted
Order is imparted
98
99
100
Ordered Data A
Ordered Data B
Ordered Data C

FIG. 34

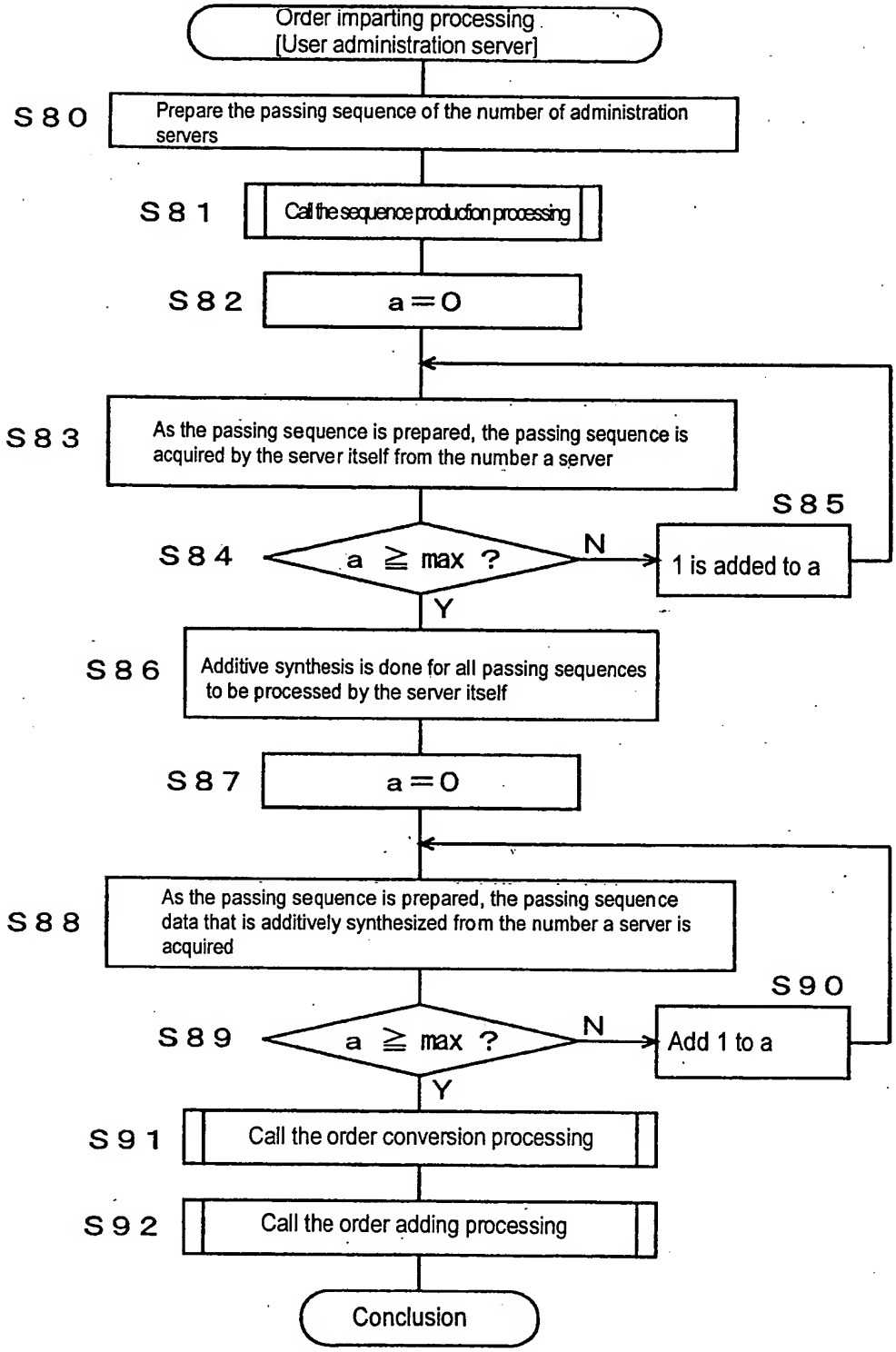

Order imparting processing
[User administration server]
S80
Prepare the passing sequence of the number of administration servers
S81
Call the sequence production processing
S82
a=0
S83
As the passing sequence is prepared, the passing sequence is acquired by the server itself from the number a server
S84
a ≧ max ?
N
S85
1 is added to a
Y
S86
Additive synthesis is done for all passing sequences to be processed by the server itself
S87
a=0
S88
As the passing sequence is prepared, the passing sequence data that is additively synthesized from the number a server is acquired
S89
a ≧ max ?
N
S90
Add 1 to a
Y
S91
Call the order conversion processing
S92
Call the order adding processing
Conclusion

FIG. 35

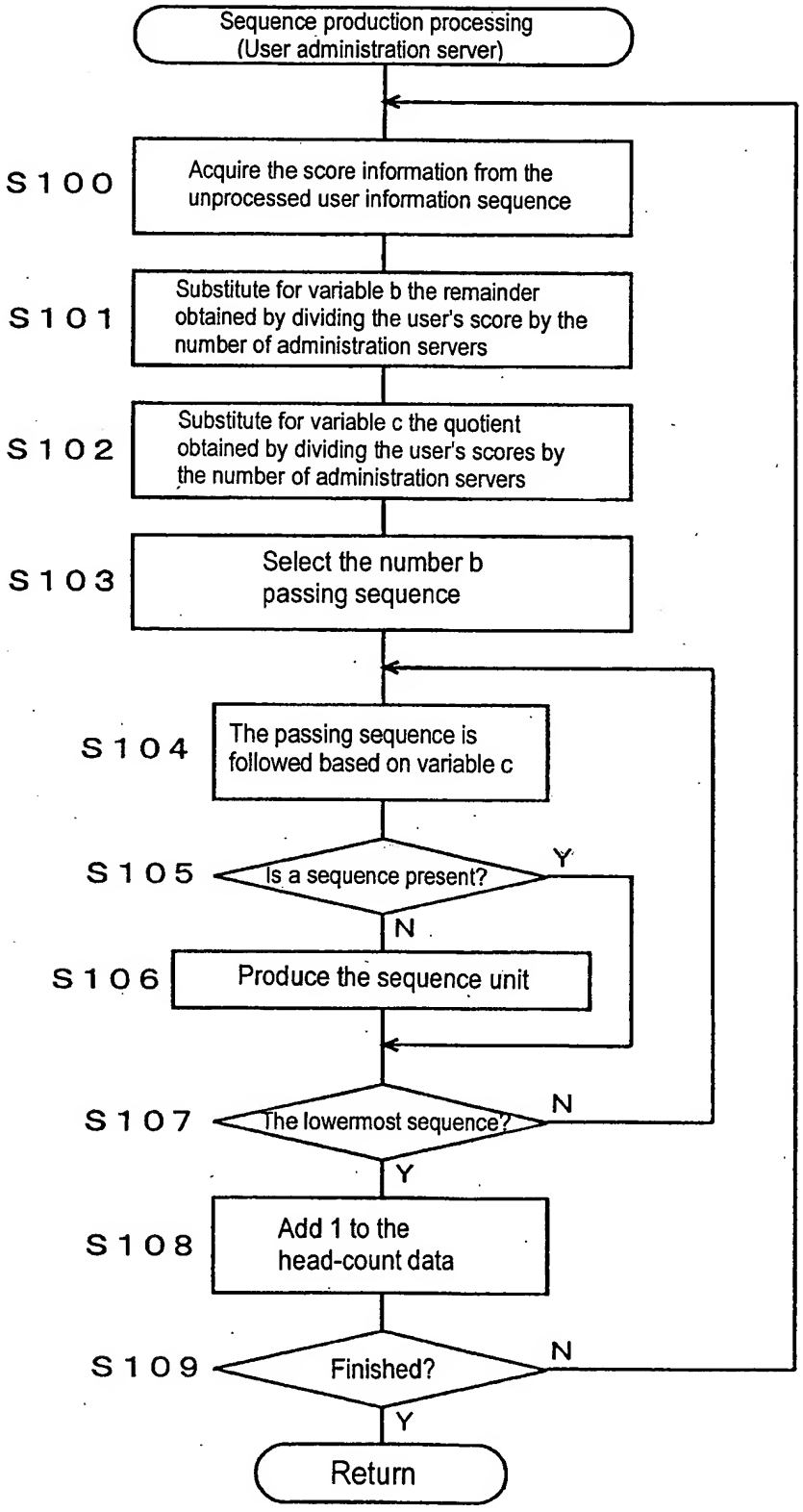

Sequence production processing
(User administration server)
S100
Acquire the score information from the unprocessed user information sequence
S101
Substitute for variable b the remainder obtained by dividing the user's score by the number of administration servers
S102
Substitute for variable c the quotient obtained by dividing the user's scores by the number of administration servers
S103
Select the number b passing sequence
S104
The passing sequence is followed based on variable c
S105
Is a sequence present?
Y
N
S106
Produce the sequence unit
S107
The lowermost sequence?
N
Y
S108
Add 1 to the head-count data
S109
Finished?
N
Y
Return

FIG. 36

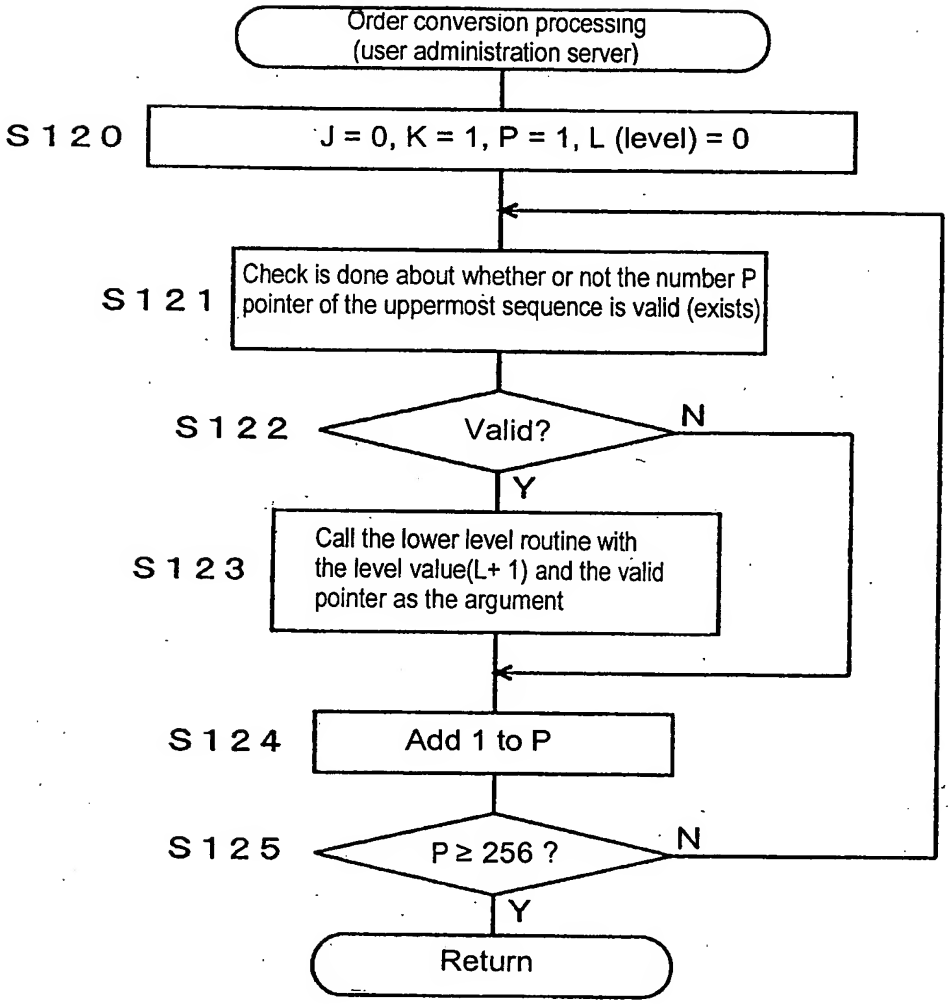

Order conversion processing
(user administration server)
S120
J = 0, K = 1, P = 1, L (level) = 0
S121
Check is done about whether or not the number P pointer of the uppermost sequence is valid (exists)
S122
Valid?
N
Y
S123
Call the lower level routine with the level value(L+ 1) and the valid pointer as the argument
S124
Add 1 to P
S125
P ≥ 256 ?
N
Y
Return

FIG. 37

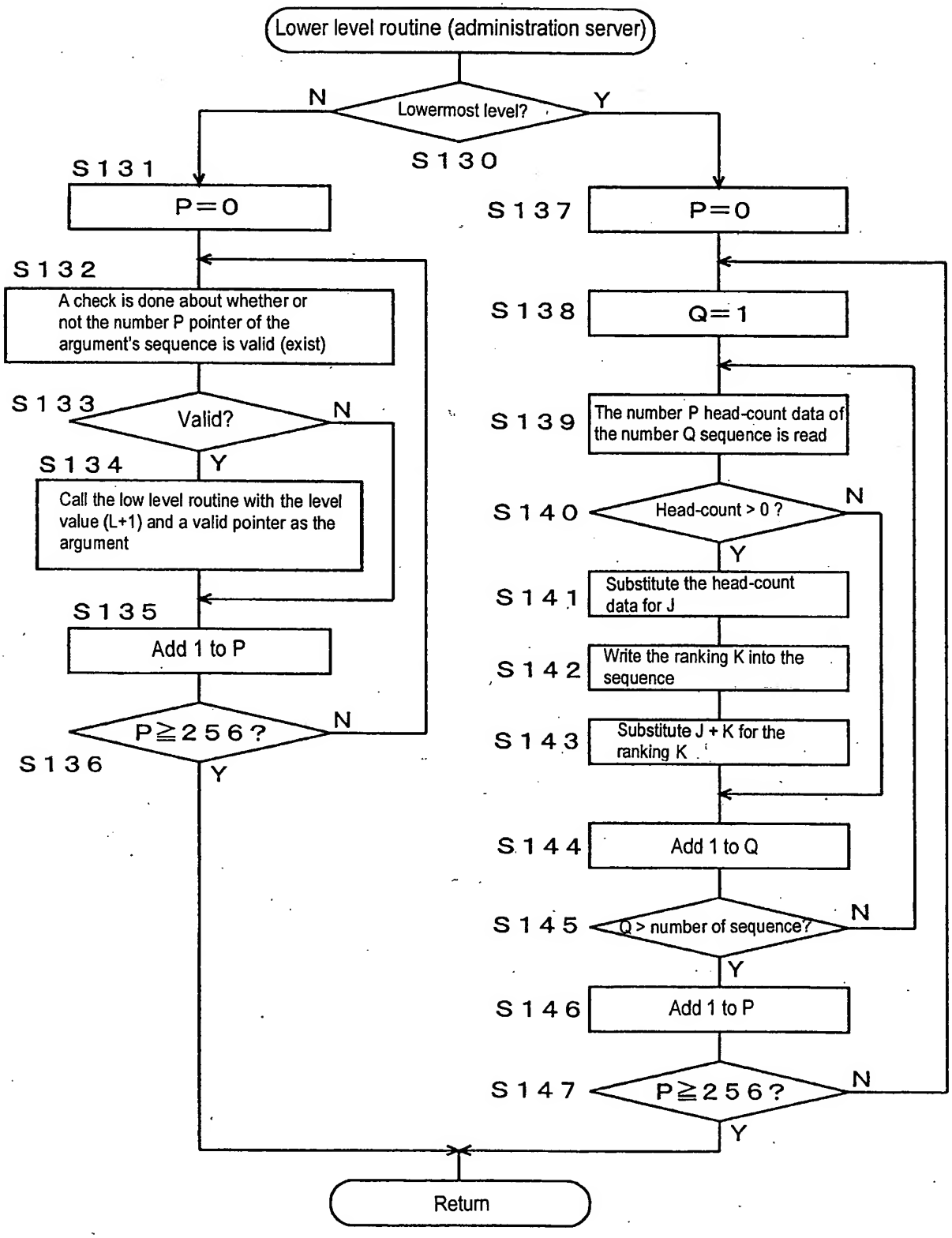
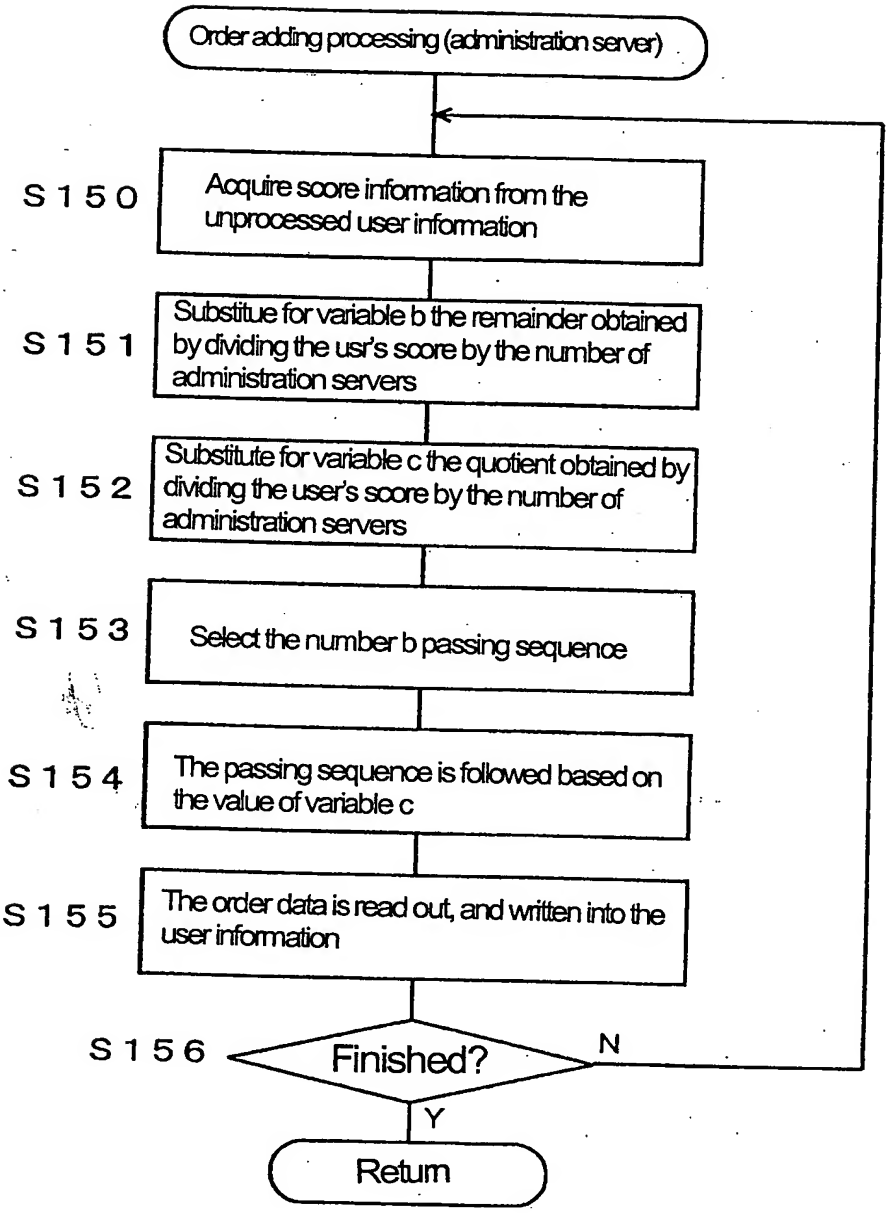

Lower level routine (administration server)
Lowermost level?
N
Y
S130
S131
P=0
S132
A check is done about whether or not the number P pointer of the argument's sequence is valid (exist)
S133
Valid?
N
Y
S134
Call the low level routine with the level value (L+1) and a valid pointer as the argument
S135
Add 1 to P
P≧256?
N
Y
S136
S137
P=0
S138
Q=1
S139
The number P head-count data of the number Q sequence is read
S140
Head-count > 0 ?
N
Y
S141
Substitute the head-count data for J
S142
Write the ranking K into the sequence
S143
Substitute J + K for the ranking K
S144
Add 1 to Q
S145
Q > number of sequence?
N
Y
S146
Add 1 to P
S147
P≧256?
N
Y
Return

FIG. 38


Order adding processing (administration server)
S150
Acquire score information from the unprocessed user information
S151
Substitue for variable b the remainder obtained by dividing the usr's score by the number of administration servers
S152
Substitute for variable c the quotient obtained by dividing the user's score by the number of administration servers
S153
Select the number b passing sequence
S154
The passing sequence is followed based on the value of variable c
S155
The order data is read out, and written into the user information
S156
Finished?
N
Y
Return